Lessons From the Land: How Northern Ontario Architecture can be Influenced by Land-Based Learning

by

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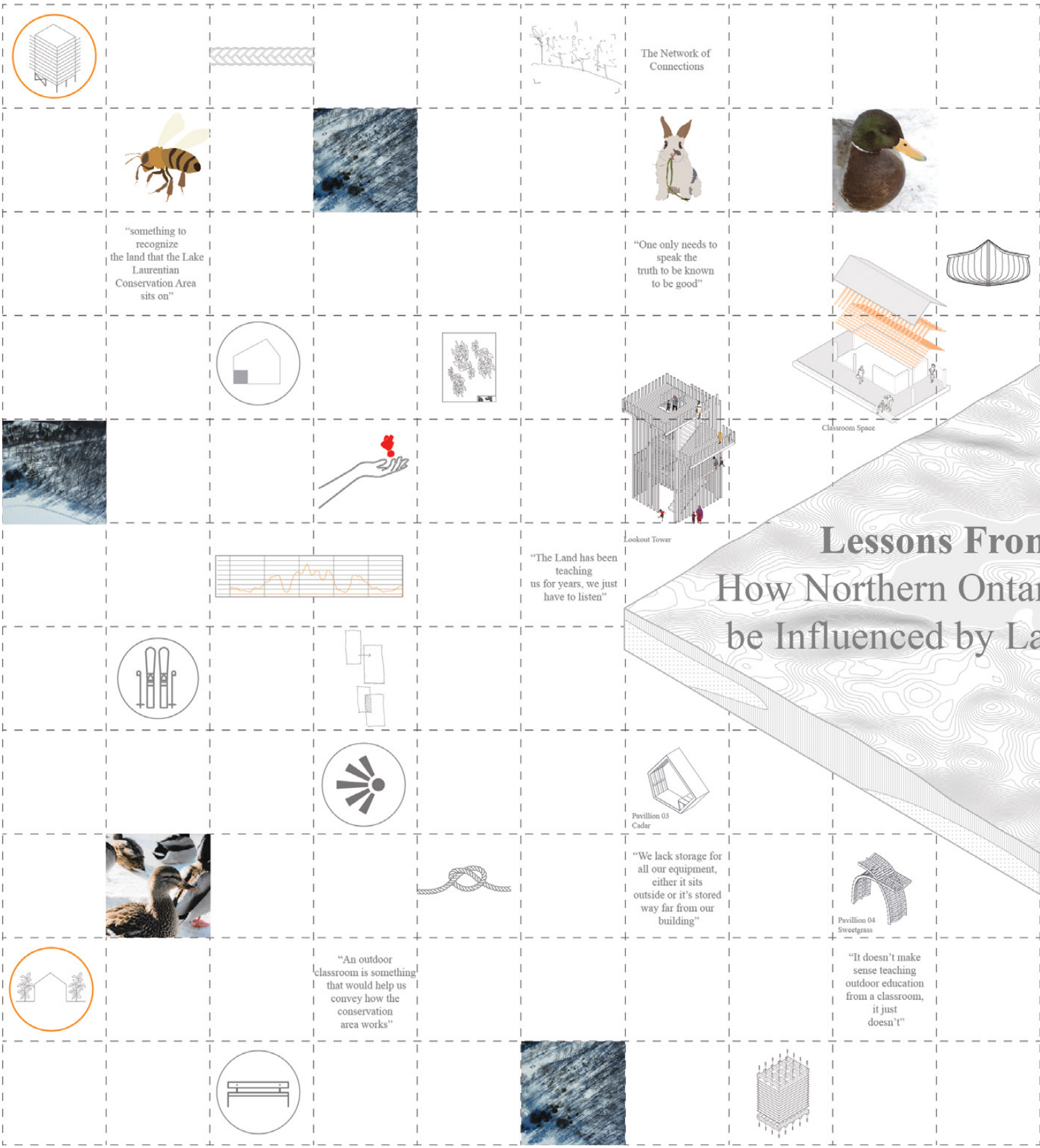
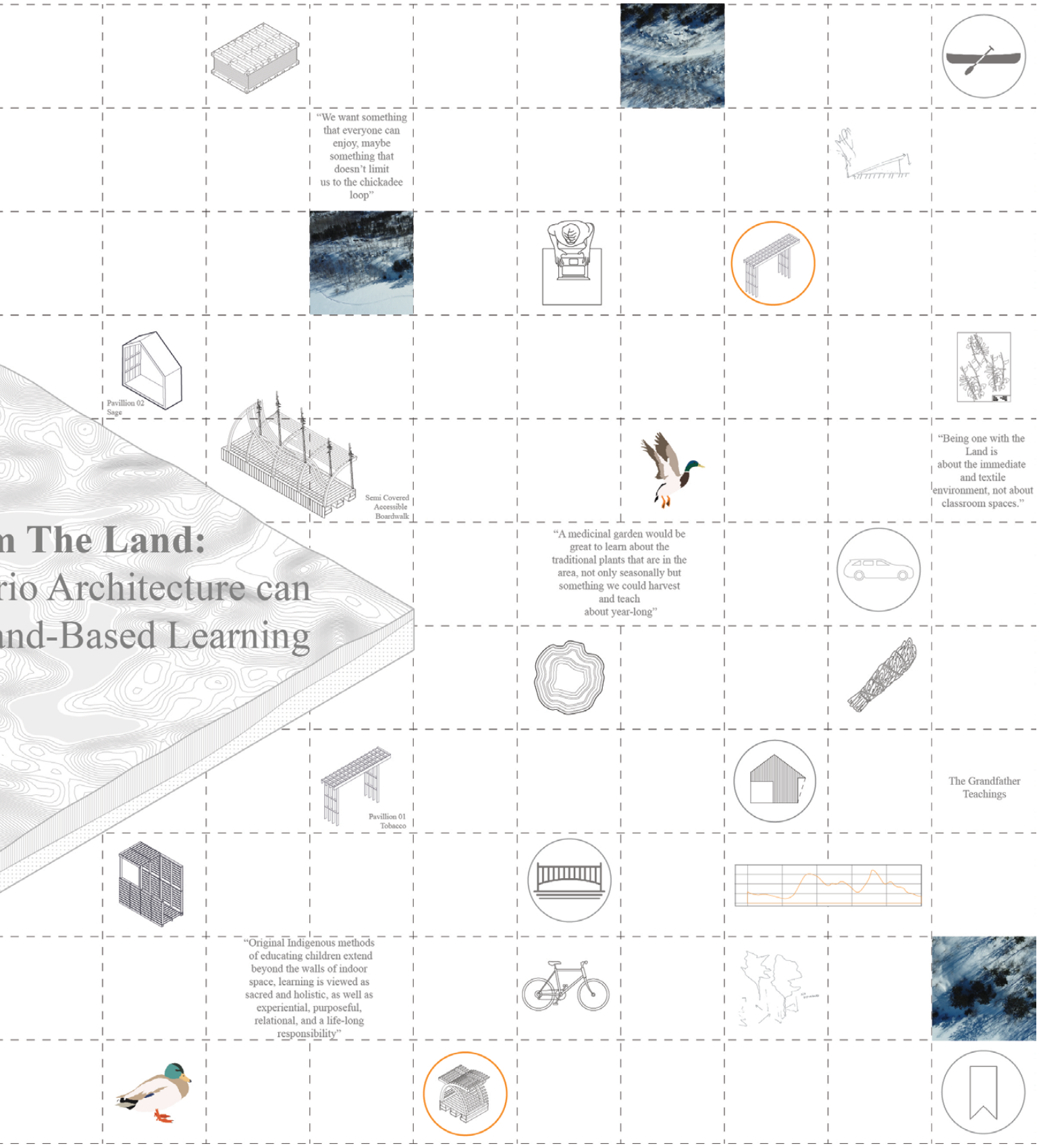
Fig.01
Lessons From the Land





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Territorial acknowledgement

I'd like to begin by acknowledging the Robinson-Huron Treaty of 1850. I also further recognize that Laurentian University is located on the traditional lands of the Atikameksheng Anishnawbek and that the Greater City of Sudbury also includes the traditional lands of the Wahnapitae First Nation.

I also I wish to acknowledge that the land in which I preformed research on, is part of the traditional territory of the Nbisiing Anishinaabeg People.

Before I begin to explain the foundation of this thesis project, I'd like to state that there are several terms that need to be defined in order to understand their intended meanings. Because the project refers to a wide range of academic research, as well as people from various communities, and who have inhabited these homelands since the time of Turtle Island, long before colonisation, I will use the terms "Indigenous" and "Aboriginal" interchangeably. As a mark of respect and to honour an indigenous notion of location or environment, the term ***Land*** *shall be capitalised. When the word "land" is capitalised, it refers to a wider cultural construct that represents a complex entity with physical, intellectual, spiritual, and emotional features. This was learnt through my interactions with Elder Art Petatahgoose, while speaking of the seven Grandfather Teachings.*

Acknowledgements

Prior to this thesis, I had the chance to take part in Dr. Kai Wood Mah's Community-based studio, in which he pushed me to study a topic I held close to my heart. Kai allowed me to emerge myself within a community setting by allowing me to challenge typical Western views. Continuing the teachings I acquired from Kai, I pursued a thesis topic that explored educational norms and boundaries.

I am also incredibly grateful to my advisor, Dr. Terrance Galvin, for the guidance, trust and support throughout this thesis process. Your vast knowledge of everything and anything made for highly purposeful and engaging conversations.

My second reader, Dr. Peter Beckett, was also a reassuring presence throughout the thesis. He was always available at short notice to chat about different aspects of the project. His expertise on ecological sustainability guided me towards a project that aims to be as minimally invasive as possible.

Thank you to Elder Art Petahtegoose, for teaching me how to respect, listen, and learn from the Land. This thesis could not have happened without your Grandfather Teachings.

Thank you to the various stakeholders that were eager to hear and discuss my thesis topic multiple times to ensure the project reflects the various communities needs and wants.

And finally, thank you to my family, for always offering to help me with any problems I've encountered, not only for this thesis but throughout my entire educational life.

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Thesis Question

How does Indigenous Land-based education and experiential learning influence architecture to enable human beings to reconnect ourselves with the intuitive connection with the Land?

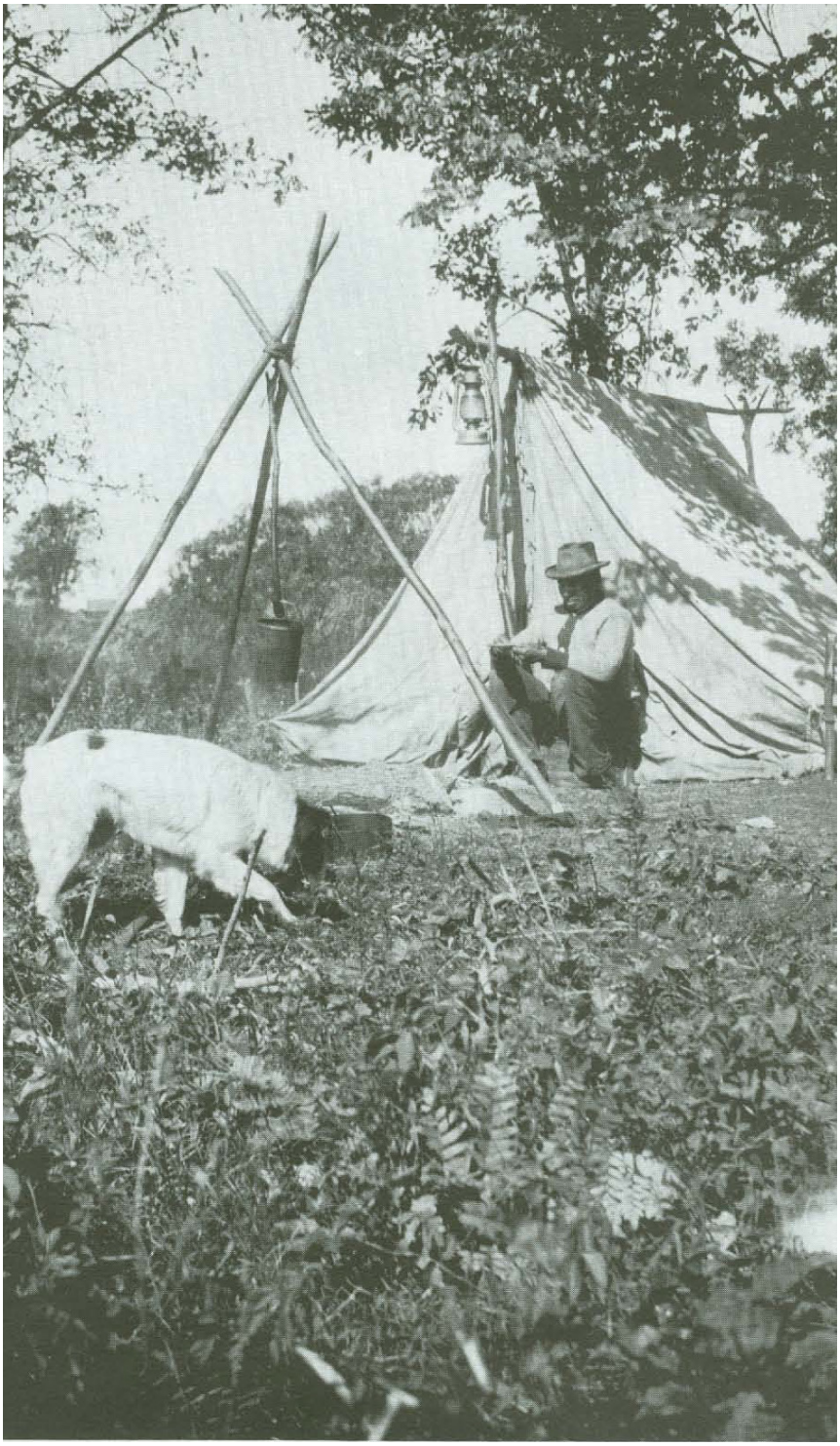
Abstract

Keywords

Reconciliation
Well-being
Architecture
Land-based learning
Indigenization
Experiential education
Sustainability
Lake Laurentian Conservation Area

Health and well-being are a relationship that can be explored through the Land. Understanding this connection is something the Indigenous peoples living in Canada have been doing for thousands of years.

Analyzing the social determinants of health in urban and rural communities, the work conducted tries to rekindle ancestral knowledge to create a strong relation to the Land using a series of reciprocal connections with various members of the community of Sudbury. Utilizing three main stakeholders: Conservation Sudbury, professionals at Laurentian University, and Indigenous scholars, the process undertook a bottom-up approach to design that fulfils as much of the community's needs and wants as possible. Located on the Lake Laurentian Conservation Area, the proposed project aims to bring small-scale architectural interventions along various trail segments to encourage experiential education and Land-based learning to ultimately increase peoples' health and well-being.



Where are we?

Fig.02
Photo of Jokko Jaagiiwes, taken in the Nipissing First Nation Land, in the small community of Jokko Point, 1927.

First Nations people have occupied Lake Nipissing and its surrounding land for over 9,000 years.[1] The Nbisiing Anishinaabeg people come from Ojibwe and Algonquin decent, where they were traders of corn, fish, tobacco, furs and more, long before European contact.[2] The Nipissing people have a long and scattered history of their territorial Lands within the Land that is now called Ontario. Specifically, the people migrated around Lake Nipissing and occupied the Land, from which they get their name.[3] There has been archaeological evidence showing the people have occupied this Land and area for more than nine-thousand years.[4]

"To the early French explorers and missionaries the Nipissing's were known as Bissirniens, Nepissirians, Nepissings, Nipissiriens, Nipistingues, and by the Hurons as Askikwanehronans; off of which translate to "people of little water".[5] Like their nearby persons, the Nipissings were hunters, gatherers, while agriculture was unheeded. After the two treaty incidents in 1850, the Nipissings continued their traditional hunting and gathering, although they were increasingly involved with agriculture in Beaucage Point, Duchesnay Creek, and Garden Village.[6] Alongside the Nipissings, the people from the Whitefish River First Nation used to occupy the Land that is now called Sudbury, paddling the Rivers and Lakes to harvest materials, hunt fish and using the Land as a teaching tool.

The Sudbury Star
THE NICKEL DISTRICT'S LEADING NEWSPAPER
SUDBURY, ONT., WEDNESDAY, JUNE 24, 1925

GAME SANCTUARY TO SURROUND SUDBURY

40 SQUARE MILES OF TERRITORY IS SET ASIDE

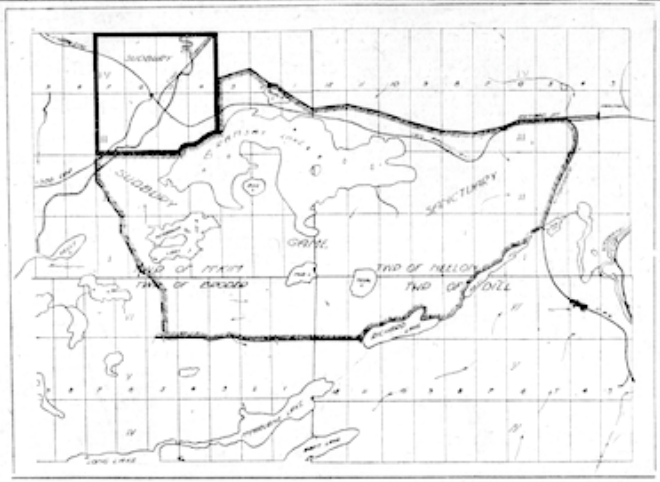
Covers Parts of 4 Townships and Lake Ramsay

As a result of a move undertaken by the Sudbury Game and Fish Association, a game sanctuary is being established in the immediate vicinity of Sudbury and Lake Ramsay, covering a territory of approximately forty square miles, including sections of four townships, Neelon, McKim, Broder and Dill. The restricted area has been carefully outlined by officials of the association and the boundaries have been definitely set. Government officials have expressed their approval of the project, and formal sanction is only a matter of time.

Killing of all wild life within this reserve will be absolutely prohibited for an indefinite period of time for the purpose of preserving the game in this section of the district, from which, in recent years, it has vanished to an alarming degree.

Property owners in the restricted area are unanimously in accord with the sanctuary as is evidenced in the petition in the hands of the game and fish association, bearing the signatures of ninety eight per cent. of the ratepayers of the land. Residents have also promised their co-operation in seeing that the restrictions are observed, and since the reserve will be placed under the supervision of game officials, infractions will be prosecuted in the fol-

SUDBURY'S GAME PRESERVE



The above map outlines the territory which will be closed to hunters for an indefinite period of time in an effort to preserve wild life in this immediate district.

Diamonds Stolen in Broad Daylight | AMUNDSEN SAILS | Rotary President | CALL TENDERS

SCHROEDER FREE; QUITS HOSPITAL TO GO BACK HOME

Winnipeg Police Hold no Charge Against Him

Recovered from his physical suffering and with his mind relieved of fearful tortures that were constantly urging him to actions which imperilled his life, Gottlieb Schroeder, "persecution maniac" of Elmwood, Manitoba, accused by a coroner's jury of being negligently responsible for the drowning of a 13-year-old boy, left St. Joseph's Hospital at Sudbury on Monday evening and the same night, boarded a train for Winnipeg where his wife and family of two children await him.

According to a communication received by Inspector Morris of the Provincial Police who investigated Schroeder's case when the man while in a crazed condition, hurled himself through the window of a passenger train travelling between Sudbury and Sudbury Junction, there is practically no likelihood of criminal proceedings being instituted against him in Manitoba. "There does not appear to be any good and sufficient grounds for court action," the communication from C. H. Newton, Chief Constable of Winnipeg states.

On June 6th at Elmwood, on the Red River, a 13-year-old boy, Robert Rock was drowned. Schroeder, who owned a boat in that vicinity, is accused of refusing to lend it to the rescue party that asked him for it in order to save the drowning lad.

Far Flung is Fame of the Sudbury Star

Montreal, Que., June 24 (Special)—One of the first things N. J. McCubbin, ex-president of the North Bay Board of Trade, wanted to talk about, when he landed here on Saturday night from a six-weeks' trip abroad with Mrs. McCubbin was the fact that he had picked up a copy of the Sudbury Star in the far north part of Scotland.

"We had not seen a home paper for some time," said Mr. McCubbin, "and had gone into a little store in the north of Scotland to get some postcards. We got into conversation with the proprietor and he asked us where we came from. We told him from Canada.

"I have a son who used to be in business in Canada," he said, "but his health failed him and he came home. I just forget the name of the town but it was in Ontario and we still get a paper from there."

"I told him that we came from Ontario ourselves so he asked us to wait a few minutes and went to dig up a paper. He came back with three recent copies of the Sudbury Star! Never was a paper more welcome. We read even the advertisements and then passed the papers on to Mr. and Mrs. A. C. Rarabeck, whom we happened to meet that evening."

POPULAR GIRL DIES SUDDENLY

Miss Effie Bissett Succumbs After Two Hours' Illness

With startling suddenness, death came to Miss Effie May Bissett, popular Sudbury girl, daughter of Mr. and

LION TAMER HAS NARROW ESCAPE AS BEAST REBELS

Trainer Mauled at End of Act—Saved in Nick of Time

What thousands had predicted as the inevitable, that the trained beasts in the lion act of Sparks' circus would "get" Steve Ratty, the famous animal trainer, happened in Sudbury on Monday afternoon, when at the close of the act, one of the beasts rebelled, struck the trainer down from behind and mauled him badly before Franz Woske, assistant trainer, on guard in the ante cage, could effect a rescue. Ratty was clawed about the abdomen and lower limbs before he could be dragged to safety. The lion was subdued by the bark and flash of blank shots fired into its face by Woske as he snapped shut the door of the cage.

The affair came as a climax to an animal act which had more than its usual share of thrills as, owing to the storm which raged at the time, the lions were "jumpy," and the animal handlers more than once had fears for Ratty's safety after he entered the cage.

Woske, who dragged Ratty to safety after the lion had knocked the trainer down in the cage entrance, is today the circus hero for he not only saved Ratty's life but he slammed the door of the cage in bare time to prevent the escape of the infuriated animal into the open ring. The dramatic in-

A Brief History of Sudbury

Fig.03 Newspaper article showing the "Game Sanctuary" being set aside to be the new Conservation Area. This was a step towards land reclamation.

Prior to the establishment of the reserve system in 1867 by the Parliament of Canada, the Whitefish Lake Ojibway hunted and occupied a vast territory well beyond the boundaries of their present reserve. They regularly paddled canoes through Lily Creek to Ramsey Lake, which they call Bitimigaasing "The water that lies on the side of the hill." Considering the archeological footprint left by the local tribes for thousands of years, researchers have speculated that the Indigenous communities came from the Western Plains. In the mid 1600s, while the Hudson Bay area was being explored by the British, the French started to explore Northern Ontario using the Great Lakes system rather than the Hudson Bay. The position of now-called Whitefish, Spanish, and Serpent River were categorized on early French maps as "Indian Algonquin or Outaouacs Territory", "Chippewa Hunting Territory", and "Toute cette coste n'est pas connue", translated in simple terms as "Unknown Land." With the advent of the Hudson Bay Company and the Fur Trade, new posts were added, including one on the Nipissing First Nation Land, Whitefish, and Sudbury. By the 1880s, Sir John A. Macdonald and his conservative government approved the construction of a transcontinental railway, roughly 5,000 kilometres in length, to access more rural Land. The Canadian Pacific Railway would follow the course established by the survey crews, from the community of Whitefish, to the City of Sudbury. With the newly discovered Land and resource posts, the provincial government ordered the Land north of the French River to be surveyed and divided into townships. The subdivision of communities was in fact driven by the need to sell timber and to have mining rights over other stakeholders. The forty townships were severed into various 15 square kilometer portions. Had the plan gone accordingly, the new construction

Fig.04
Map of Lost Lake, now known as Ramsey Lake. What is not shown is Lake Laurentian, the first finding of how man made Lakes can be a massive impact to the existing environment.

of the Canadian Pacific Railway would have cut south of Lost Lake (Ramsey Lake), crossing directly into the present day Conservation Land.

With the implementation of the Lake Laurentian Conservation Area and the Laurentian University campus on the former Game Preserve Land, the aim was to preserve and restore local ecological populations to create stable environments. Although, with mining contaminants running down directly into Ramsey Lake, the City of Sudbury had to create manmade lakes to filter and clean the water before it got into the main drinking source for the City. Thus, with the addition of the Back Water Dam at its outflow in 1965, a larger 157 hectare lake was formed. Lake Laurentian was created as a waterfowl habitat in consultation with Ducks Unlimited, to create a natural filtration system. To this day, the Lake Laurentian Conservation Area is still used as an ecological playground for biologists, scientists and outdoor learning programs. As an attempt to rekindle ancestral knowledge of the Land, flora and fauna, the thesis aims to propose interventions along this historic ground to create a sustainable way of learning from the Land, while respecting its deep historical roots.

End Notes

1 Oiva Saarinen, *From Meteorite Impact To Constellation City* (Wilfred Laurier University Press, 1997).p.18.

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11 Haynes.

Part I - Health and Well-Being

Fig.05
Northern Red Oak
"The Red Oak bark was used for dysentery and chewed to treat mouth sores; an infusion was taken to treat asthma. The bark was also used as an antiseptic and an emetic. Red Oak was also used to make baskets, cooking tools, and building materials. It was commonly used to suppress sever coughs, but bark infusions also served as a dietary aid."[8]

The foundation of this thesis project aims to explore the inequities of Indigenous health throughout Ontario and how these reflections impact even more urban communities such as Sturgeon Falls and Sudbury Ontario. As the project revolves around health and well-being as a whole, it explores social determinants of health that impact not only individual people but generational oppression. As the Indigenous people living in Canada have been victims of oppression, unequal health opportunities and racial marginalization, the thesis questions the unequal predisposition of healthcare and Indigenous traditional healing methods.[7] The question of oppression and generational trauma does not solely rest with the utmost rural Indigenous communities, thus this thesis concentrates on two Northern Ontario communities classified as urban. While understanding health and well-being on a larger scale is tremendously essential for the overall project, the intervention will deliberately be the indigenization of Land-based education and medicine within a Western pedagogy.

1.1. Health in rural and remote Indigenous communities

Now more than ever, we see the struggles First Nation reservations around Ontario face. Whether it's working with improper building materials, the lack of education, the lack of essential resources such as healthcare, or food insecurity, it is evident that First Nation communities aren't given a chance to thrive.[9] As the health and well-being of Indigenous people keep decreasing, the government and the people of Ontario must acknowledge this inequity. With rurality being the main obstacle when it comes to healthcare resources for Indigenous communities, the healthcare struggles of other more "urban" communities are still predominant. "'Rural' communities in Ontario are those with a population of less than 30,000 that are greater than 30 minutes away in travel time from a community with a population of more than 30,000."[10]

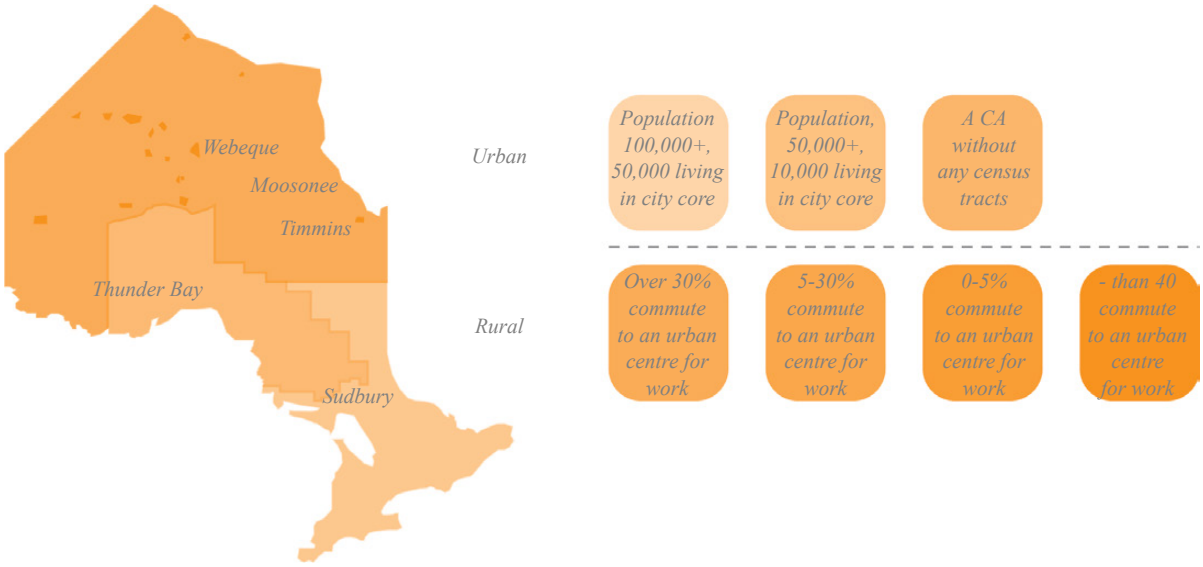
While studying one of the several definitions of Ontario Rurality, it is evident that the source of this problem can be rooted within the definition itself. "Indigenous reserves are outliers in that many of them that are not part of a CMA [census metropolitan area] are considered rural despite being close to population centres, indicating that people living on reserves tend not to commute to nearby population centres."[11] To describe Ontario rurality, especially of Indigenous reservations, the Ontario Health Panel realizes that more often than not, there is a threshold of when the typical health resources come to an abrupt halt.[12] This is because fewer physicians and specialists are willing to work within the depths of Rural Ontario. While analyzing remote communities, it is defined as a location without year-round access in which they rely on a third-party mode of transportation (e.i. trains, airplane, ferry or snowmobile). Generally speaking, the risks of living in a rural community involve a lower life expectancy at birth, the all-cause mortality rates of all sexes increase drastically with the level of remoteness, a higher

Fig.06
What is rurality? The study of the definitions of rurality and how this can be seen as the first step in identifying the problem in northern Ontario rurality.

portion of rural residents report an overall lower level of health than Canadians living in urban areas and a significantly higher population of people between the ages of 20-65 report an increased risk of obesity than Canadians living in urban Canada.[13]

1.2. Indigenization

Of course, when talking about remote Northern Ontario, we also see a significant risk of access challenges. When analyzing remote healthcare conditions, due to the lack of hospitals and healthcare infrastructure, there is a much higher risk of being transferred and hospitalized for a condition that would be a trivial treatment in urban communities.[14] Furthermore, the lack of secondary and tertiary services are also lacking in remote locations such as community services, primary care/family health teams, emergency medical services, public health, increasing the possibilities of hospitalizations, infections and death.[15] Well-being will be used as an umbrella term referring to a person's overall health that is influenced by external factors out of the reach of the person in question. For example, someone's well-being can be affected by environmental factors such as pollution, lack of freshwater or environmental exposures. Other factors include health, social circumstances, genetic predispositions (i.e. Huntington's or other diseases out of someone's control),



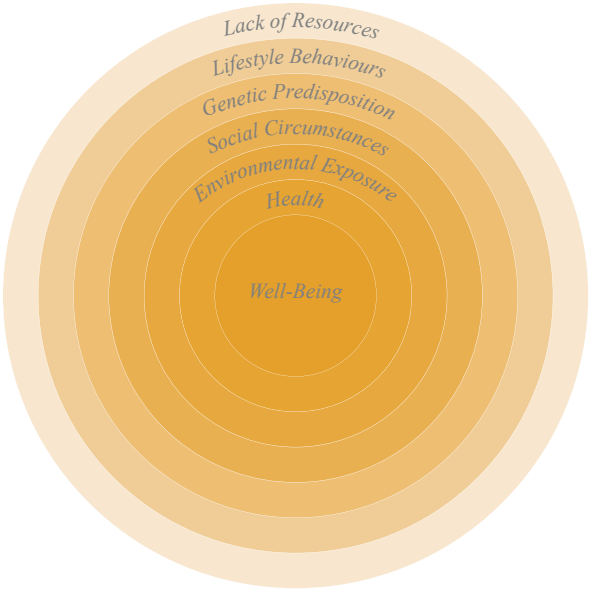
lifestyle behaviours, and lack of public resources. These terms can be defined as social determinants of health.[16]

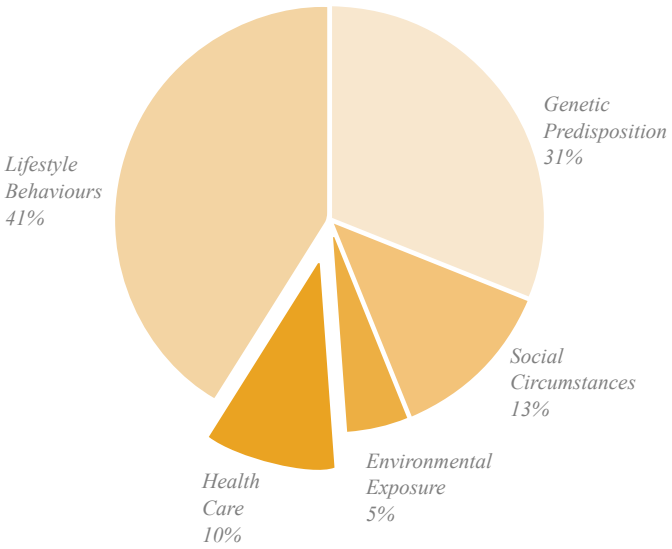
1.3. Well-being

As the project revolves around health and well-being as a whole, the thesis addresses the unequal predisposition of health and Indigenous traditional Land-based approaches to health and well-being. The question of oppression and generational trauma does not solely rest with the utmost rural Indigenous communities, thus this thesis concentrates on two Northern Ontario communities classified as urban. While understanding health and well-being on a larger scale is essential for the overall project, the intervention will be the indigenization of Land-based education and medicinal knowledge within a Western pedagogy. Of course, these social determinants of health aren't limited to the list previously iterated. Although for First Nation communities, they are unfortunately the most prevalent.[17] Due to remote locations and lack of primary resources, this population is especially vulnerable to experiencing a reduced sense of well-being. The Indigenous population is sadly at risk for experiencing these social determinants of health more than people living in urban areas, although this experience is not always a linear path.[18] Indigenous people of Canada have faced centuries of oppression and stripping of their culture. The result of colonialism, residential schools, and the 60s scoop is just to name a few examples of how Indigenous people face generationial oppression every day. The significant repression Indigenous people have been victims of has not only left the older generation with coping problems, but this has also been left as a generational burden. The government of Canada has been called to action by the *Truth and Reconciliation Commission's* 94 Calls to Action, where only 13 are complete. This is far from taking a step towards reconciliation in

a settler country. While health can be categorized by "the state of being free from illness or injury", well-being can be perceived differently by any individual.[19] The burden of being left without a sense of well-being can cause an unlimited number of issues, such as environmental conditions and independent interests.[20] The reciprocal transfer between someone's health and well-being directly impacts each other, acting as a cycle where one directly influences the other. Because of this interaction, the thesis aims to bring to light traditional methods to increase someone's well-being, inevitably improving the individual's long-term health. While place and situational presence can be significant factors to a person's well-being, the research began to be spatialized within natural elements to understand the relationship between well-being and the Land.

Fig.07
It's completely evident how much Northern communities need better access to health care and physicians. This, by no means is an easy solution, but the first step is acknowledging the predisposition of health care and start to formulate a constructive plan to reimagine the current state of health resources. With the introduction of the Northern Ontario School of Medicine (NOSM), rural healthcare education has been at the core of their pedagogy, involving more rural communities in placements to create a balanced access to healthacre.





End Notes

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End Notes Cont.

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14 Ibid.

15 Ibid.

16 Charlotte Reading and Fred Wien, *Health Inequalities and Social Determinants of Aboriginal Peoples' Health,* Prince George, BC, National Collaborating Centre for Aboriginal Health, 2009. 36. p.22.

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18 Ibid. p.28.

19 Ibid. p.25.

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21 Roger Crisp, "Well-Being," *The Stanford Encyclopedia of Philosophy*, 2021.

Part II - Land

Fig.08
Balsam Fir
"This tree contains a range of aromatic compounds, resins, tannins and volatile oils. Liquid pitch from bark blisters, bark needles and cones are used; pitch and needles used as poultice for sores, wounds, bruises, cuts, sprains, burns, bites, and infections."[22]

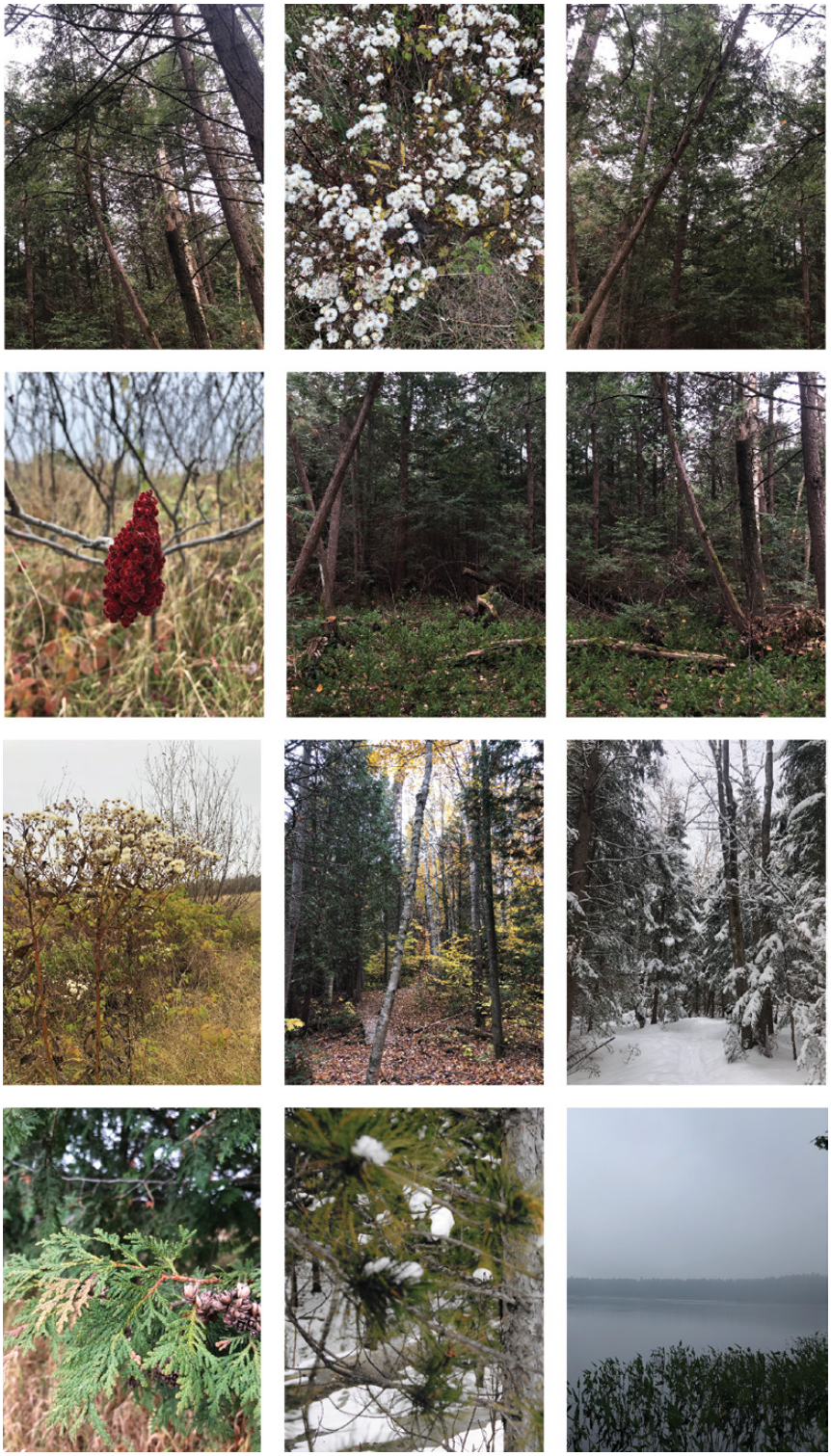
During the design process, multiple sites were analyzed, documented, and carefully chosen throughout the project to create a connection with the Land. While the research presented does not include subjective experiences and findings, the premise I have explored is directly related to Land-based education research, Grandfather teachings, and Indigenous values. Six areas were studied across an 88-kilometre radius, exploring various flora and fauna, community settings, and possible programming options. The sites in question include five locations within the Nipissing Number 10 reservation (Yellek, Beaucage Point, Meadowside, Jocko Point, Garden Village) and the Lake Laurentian Conservation Area in Sudbury, Ontario.

2.1. Place

Garden Village

Nipissing First Nation is home to eleven small indigenous communities, each having their distinct character. Between Sturgeon Falls and North Bay, Ontario, there are five main settlements of the Anashabeeg community. Garden Village, Duchesney Creek and Beaucage Point were the first three settlements around the Nipissing land base. While the traditional life of the Nipissings was mainly hunting, fishing and trapping, this rapidly changed to agriculture with the establishment of Garden Village.[23] The site exploration began in the community of Garden Village, where the primary purpose of the research was to understand the current infrastructure, existing trails and community resources in place. While simultaneously researching medical plants and herbs, the study involved a treasure hunt-like experience where mapping began to take a more health-based approach. While walking around Garden Village and the neighbouring forests, this research took a ground-up approach to communicate the existing Land and fauna. The beautiful landscape had a welcoming sense, giving the aura of humility and respect. While reflecting upon the site, twelve photographs were carefully chosen that represent this beautiful community's wildlife called Garden Village.

Fig.09
Collage of the mapping that was done in Garden Village.



Jocko Point

Jocko Point is the next community west of Garden Village. Sitting on a west bay of Lake Nipissing, this community has a similar typology as Garden Village. The site is vast, with little infrastructure exempting the large-scale gas station and convenience store adjacent to Highway 17. It was built during the construction of the Ontario Northland Railway in the early 20th century and has been host to multiple generations of Nibisiing Anashnabe people.[24] Having a calming presence, Jocko Point is where many traditional ceremonies occur on the sandy south beach of the community. The annual Pow Wow includes a tradition called the Sunrise Ceremony, where there are jingle dress dancers, beadwork to buy, and a copious amount of traditional foods. The ceremonies have been called "North Bay's finest Indigenous celebration and a Nipissing tradition".[25] While white pine and birch were prevalent, the site was also home to a radically wide range of soils and topography. From rock to moss, the earth was lush with a soil capable of bearing an abundant amount of flora. Unfortunately, the research did not go as far as confronting any wildlife besides a raven. The large songbird was circling the surrounding shrubbage, analyzing the disturbance of its Land.

Fig.10
Collage of the mapping that was done in Jokko Point.

Meadowside

As it is a quiet and small community, there is not much published history relating to this site. The fieldwork conducted was, again, the hunt for a deep connection to the Land. While the trails were beautiful with fauna flora, there was an imposition that was felt while walking the wetlands. The small respite made it evident that something didn't belong. The wildlife was present, which was surprising and eye-opening - a flock of unidentified birds, bluejays and beavers were observed. The Land mainly was undisturbed and silent, giving a sense of peace. Maple trees and birch were again prevalent and mossy trees and wet soils. Undeniably beautiful, we can see through the site photographs that the wildlife in the area are constantly busy eating, building and creating their primal architectures. From sweetgrass to pine needles, traditional medicines were prominent and easily identifiable. The urge to respect the Land was increasing with every step, forcing the decision to leave and let the Land be what it was meant to be - a natural resource for the people of Nipissing 10.

Fig.11
Collage of the mapping that was done in Meadowside.

Beaucage Point

Beaucage Point was one of the first three main settlements of the Nipissing people.[26] As the life of the Nipissing people was changing in 1854 from hunting and gathering to agriculture, the Land of Beaucage Point was cherished immensely.[27] Beaucage Point was the primary "Indian" settlement up to the turn of the century. It was here that visiting Indian Affairs officials met with Nipissings to distribute the treaty annuities. The beauty and history of the community of Beaucage cannot be put into words. The Land has a vast presence and is home to multiple types of flora and fauna. Now, the Land is a quiet settlement where one can find juniper berries, wile blueberries and other types of wild resources.

Fig.12
Collage of the mapping that was done in Beaucage Point.

The Lake Laurentian Conservation Area

Fig.13
Ducks on a Pond Conservation Area, filming Wildlife.

As the objective of the thesis is not only the physical location of the project, but the involvement of the community as well, and considering the guidelines and timeframe of the research, the chosen site was the Lake Laurentian Conservation Area, due to the direct contact and affiliation with Laurentian University, and the possible involvement of the University faculty of Indigenous studies, knowledge keepers and Elders, and other potential stakeholders. Furthermore, the impact of the Grandfather teachings on the Laurentian main campus and via zoom, a lecture series presented by an Indigenous elder, had a great impact on the narrative of the project. Attending the teachings gave the project a new meaning. Listening to Elder Art Petahtegoose has been a step towards building knowledge of the Land, the spirituality of the environment and the teachings passed down for generations. The context has been unpredictable between weeks, although always following respect, tradition, teaching and learning. The reoccurring sessions have been one step towards creating a connection with the people, community and the Land.

2.2. Mapping

The Lake Laurentian Conservation Area has been a place of refuge for students, children, and Sudbury's community as a whole. Since 1967, the interest and use of this area has been environmental education, public use, nature walking, photography, and simply experiencing the Land.[28] Located 10 minutes from downtown Sudbury and adjacent to the Laurentian University campus, this site is accessible for Land-based learning to a wide range of people. As the area might be an area of interest to be sold due to Laurentian's Companies' Creditors' Arrangement Act (CCAA) process, this thesis will explore another avenue to keep the Land for educational purposes. With multi-purpose and multi-generational occupants, the Lake Laurentian Conservation Area is an area to implement Land-based learning and traditional teachings while respecting the existing environment and fauna. Understanding the site has been a multi-disciplinary art in which countless visits took place, trying to be one with nature to understand this vast Land through a settler point of view. Reflecting on the teachings and previous research, experiencing humility was a starting point for the act of mapping.

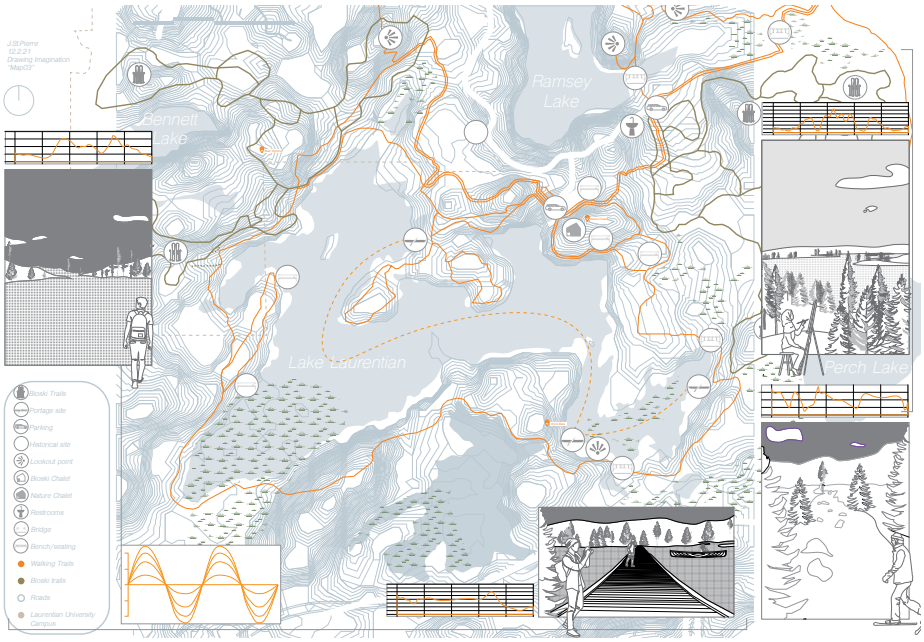


Fig.14
Collage of the mapping that was done in The Lake Laurentian Conservation Area.

Fig.15
(Left)
Map of the L.L Conservation Area thinking through drawing, an Experiential mapping Exercise.


Area in question
First Nation communities
Bigwood Lake
Ironside Lake
Joe Lake
Nelson Lake
Frenchman Lake
Wanapitei Lake
Vermillion River
Skead
Chelmsford
Whitson Lake
Azilda
Falconbridge
Whitewater Lake
Garson
Sudbury
Coniston
Wahnapitae
Copper Cliff
Lively
Kelly Lake
Whitefish
Long Lake
Lake Laurentian

The Lake Laurentian Conservation Area and its relation to the watershed

Fig.16
Mapping the watersheds to understand the importance of water on the site (information taken from the Sudbury Watershed website)

Sudbury's regreening process began in 1978, establishing a need for tree planting and quality & survival assessments.[29] This progression has been active since, and continues to acknowledge further ecological problems that the surrounding Land is facing. The Sudbury watershed is a direct accomplice for the involuntary distribution of mineral runoffs throughout the Sudbury district.[30] The continuation of large-scale mining, tailing ponds, acid rains, and smelting results in an intense mineral collection in various lakes. As a result, the Sudbury watershed is a direct highway for pollutants to direct themselves into the lakes. As mining is a significant contributor to the local economy, it is unlikely this trade will be discontinued shortly. Mines worldwide have been making an effort to be more sustainable and better for their local environment, thus mapping the local watershed can be a valuable tool of graphic representation of these possible mineral runoffs. One of the most influential water features in the northeastern part of the Sudbury Basin is the 15 km long, south-trending fault that is the Vermilion River.[31] The Vermilion River winds down throughout the western section of Sudbury, along the base of the North Range hills to finally join the Onaping River and Vermilion Lake.[32] The Sudbury watershed is host to a bigger picture, the connection between the Vermilion River and the French River make their way into lake Nipissing and Georgian Bay.[33] Although this different system is less affected by industrial contamination, the impacts of elevated mineral counts are still seen across the widespread waterway.

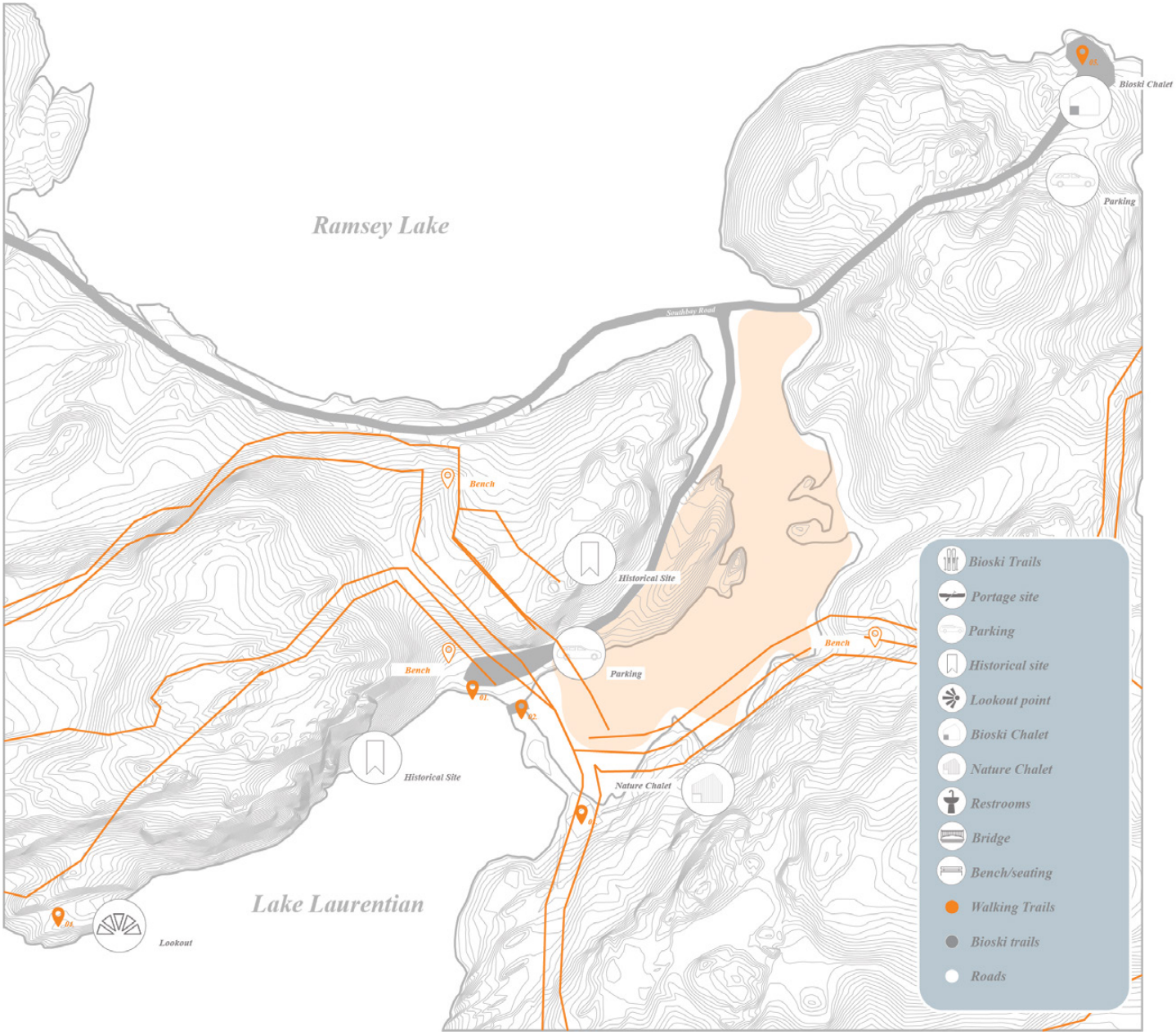

Ramsey Lake
Lake Laurentian
Southbay Road
Bioski Chalet
Parking
Bench
Historical Site
Parking
Bench
Bench
Historical Site
Nature Chalet
Lookout
Bioski Trails
Portage site
Parking
Historical site
Lookout point
Bioski Chalet
Nature Chalet
Restrooms
Bridge
Bench/seating
Walking Trails
Bioski trails
Roads

Fig.17 + 18
(Left) Mapping the entrances and existing infrastructure to understand the building typologies of the site.

(Right) Focused map of the Lake Laurentian Loop.

A small area just inside the City boundary, immediately east of Lake Wanapitei, including Ashigami Lake, drains into the Sturgeon River, reaching Lake Nipissing at North Bay.[34] Water leaves Lake Nipissing in the French River, flows south where it meets the Wanapitei River, thereby reuniting with water from the Lake Wanapitei area that had streamed directly south.[35] As roughly 40% of Sudbury's drinking water is pumped out of Ramsey Lake, the importance of Lake Laurentian and the adjacent wetland (light orange block) is immense.

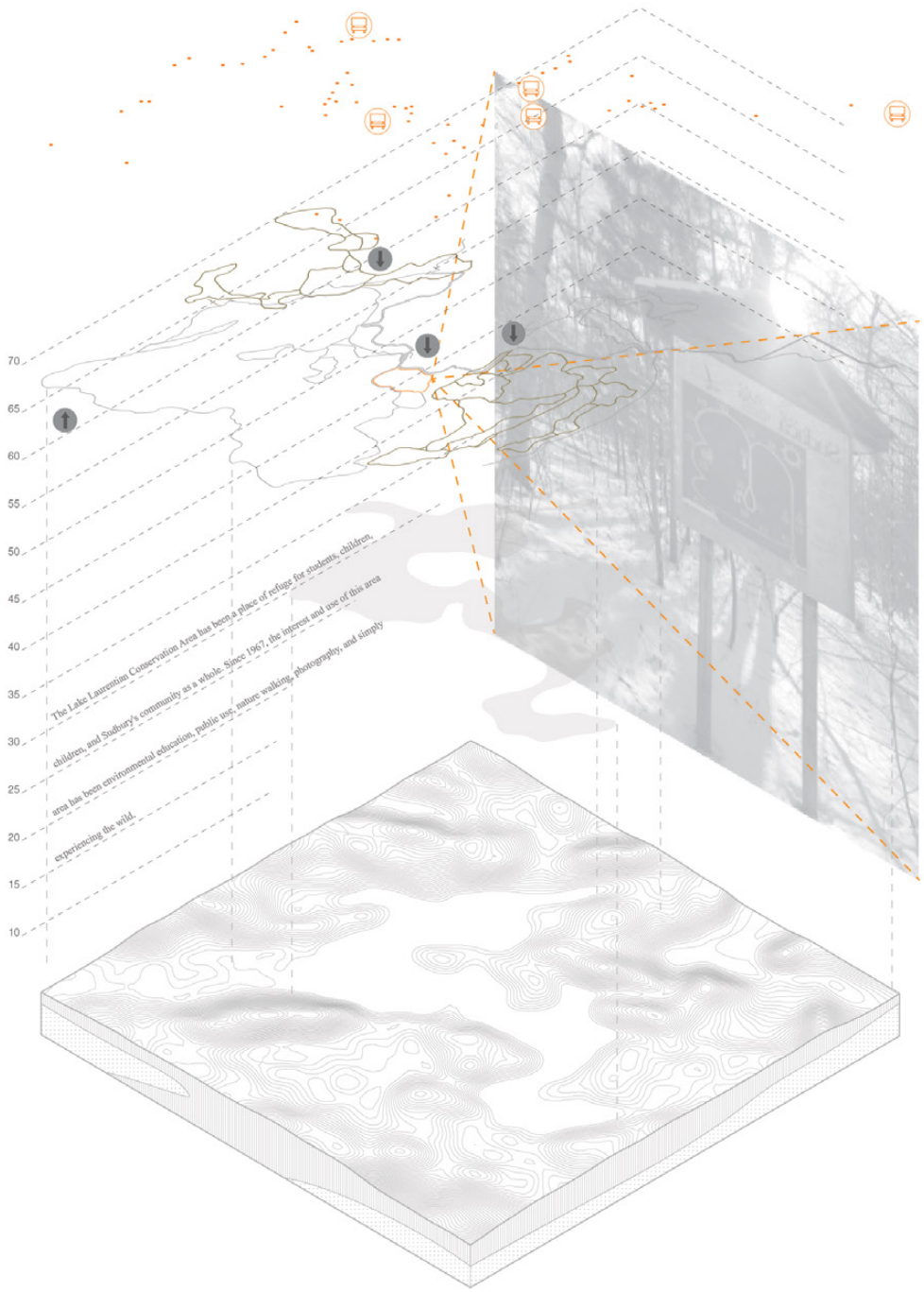


Fig.19
Existing Signage
The existing signage in the conservation area makes the trails accessible to the people who aren't familiar with the site. The signs act as a reference point, geological tracking options (through QR code scanning) and as destination markers to the everyday hiker.

Site Elevation
The conservation area is home to drastic topology differences, thus making it less accessible to the hikers who have limited mobility. As most of the trails have geologic elevation differences, one of the interventions will tackle the challenge of creating a space accessible to a wider range of users.

Entrances
There are four main entrances to the Conservation Land. The purpose of mapping them was to understand where people access the site. and where they exit. As the thesis mapped out all the various trail segments recording human interactions and people seen, 4 of the 6 interventions will be placed along the busiest trails.

The Lake
Not many people are aware that Lake Laurentian is a man-made lake. Until the 1960s a smaller lake called Mud Lake existed in the present day conservation area. With the construction of Back Water Dam at its outflow in 1965 a larger 157 hectare lake was formed. The new Lake Laurentian was created as a waterfowl habitat in consultation with Ducks Unlimited.

Uses
There are many ways to enjoy the Lake Laurentian Conservation Area. The thesis project will intersect Land-based learning, ecological conservation and education to create multiple small-scale interventions across the Lake Laurentian trails and shoreline. The architectural interventions on the Lake Laurentian Conservation Area will rekindle the ancestral knowledge of the Indigenous community of Sudbury while indigenizing the Western educational systems to create a sustainable method of land-based learning.

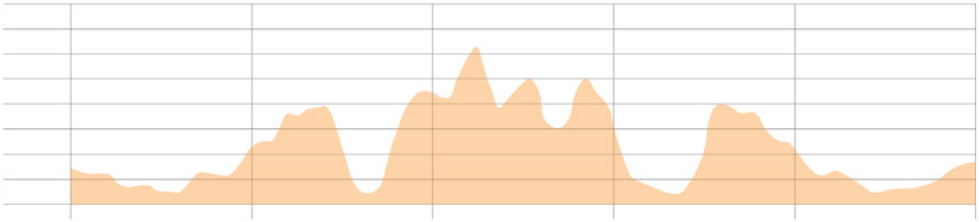
Lake Laurentian and surrounding greenspaces

The conservation area is host to abundant historical, ecological and natural resources. While exploring the site, it is evident that there is a natural hierarchy of terrains. Although not always characterized by altitude differences, when experiencing the site there is a drawn connection to these three main lookouts and the five secondary peninsulas. It is evident that the primary peaks have a direct relation to the secondary peninsulas in view; as well, the five peninsulas are all in view and closely related to one another. This can start to inform the site locations as well as the peak moments of interest within this vast landscape.

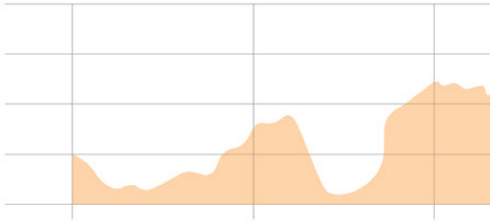
The next step was to get on the site and use the same methodologies previously used on Nipissing 10. First was the documentation of naturescapes. The Lake Laurentian Conservation Area has three main goals which are: 1) to protect 950 hectares of green space for public use and enjoyment, 2) to protect the quality of municipal water supply sources, and 3) to provide an outdoor classroom environment for teachers and students to experience natural science studies. Therefore, throughout the protected area, there are multiple trail segments, wetlands, bird watching areas, groomed ski trails, etc. However, there is also secondary programming that isn't being explored to its fullest potential, such as using the land to learn about the existing flora, fauna and their relationship to continue to grow and maintain the ecological importance of the conservation area. As valuable as the trails are, the entrances play a significant role in the conservation area. As previously mentioned, since this area is so vast, understanding how people access the site, and the time and distances required to reach the entrances from downtown was important to the study.

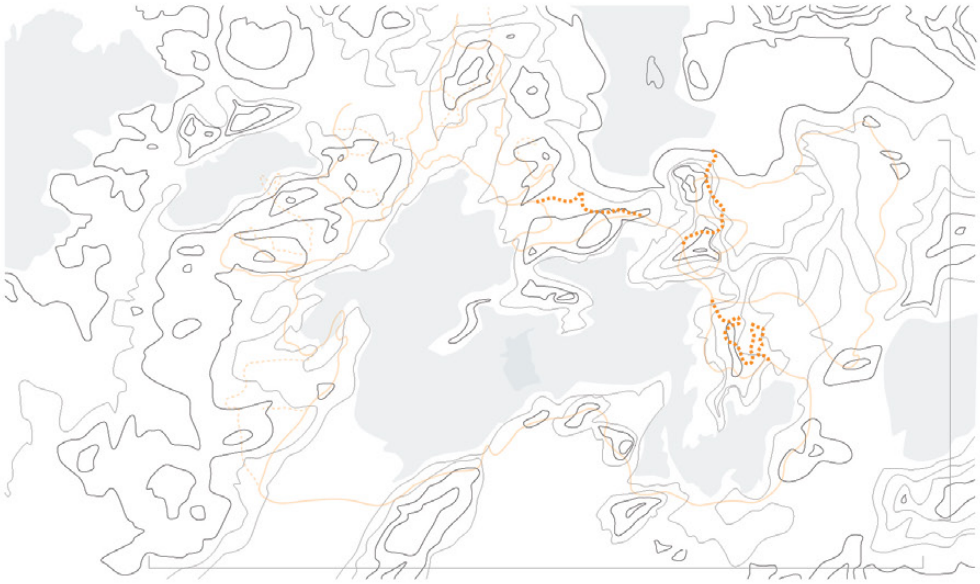
Fig.20
Mapping the built environment and topography profiles.

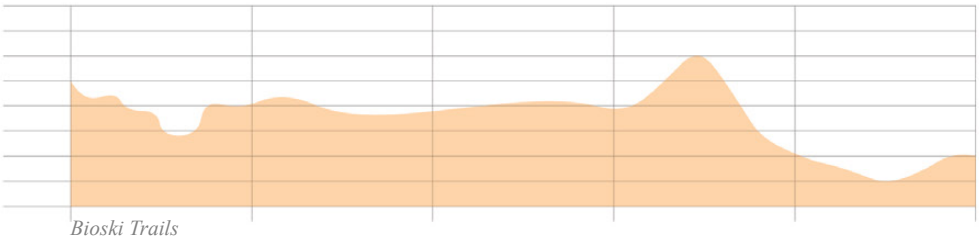
Lake Laurentian Loop



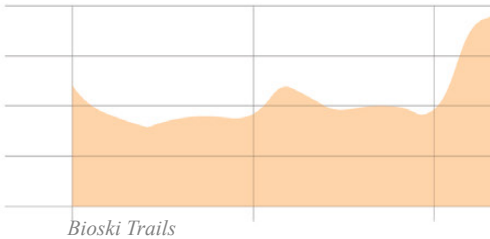
Link Trail / Lake Laurentian Loop



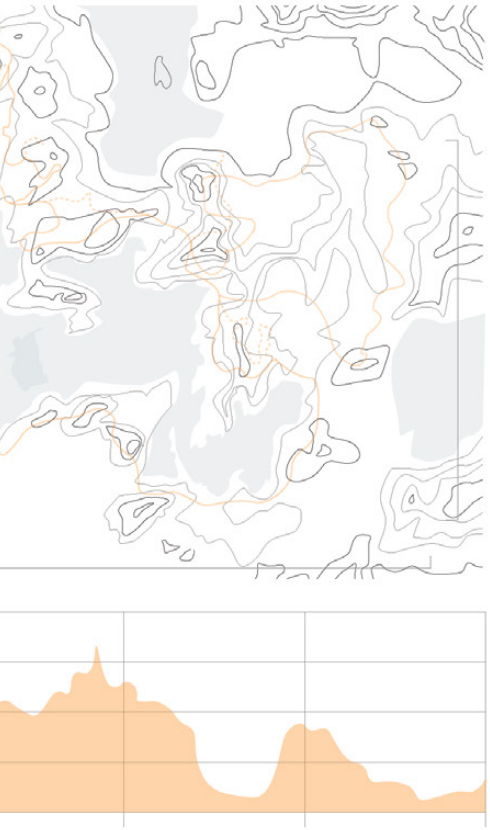


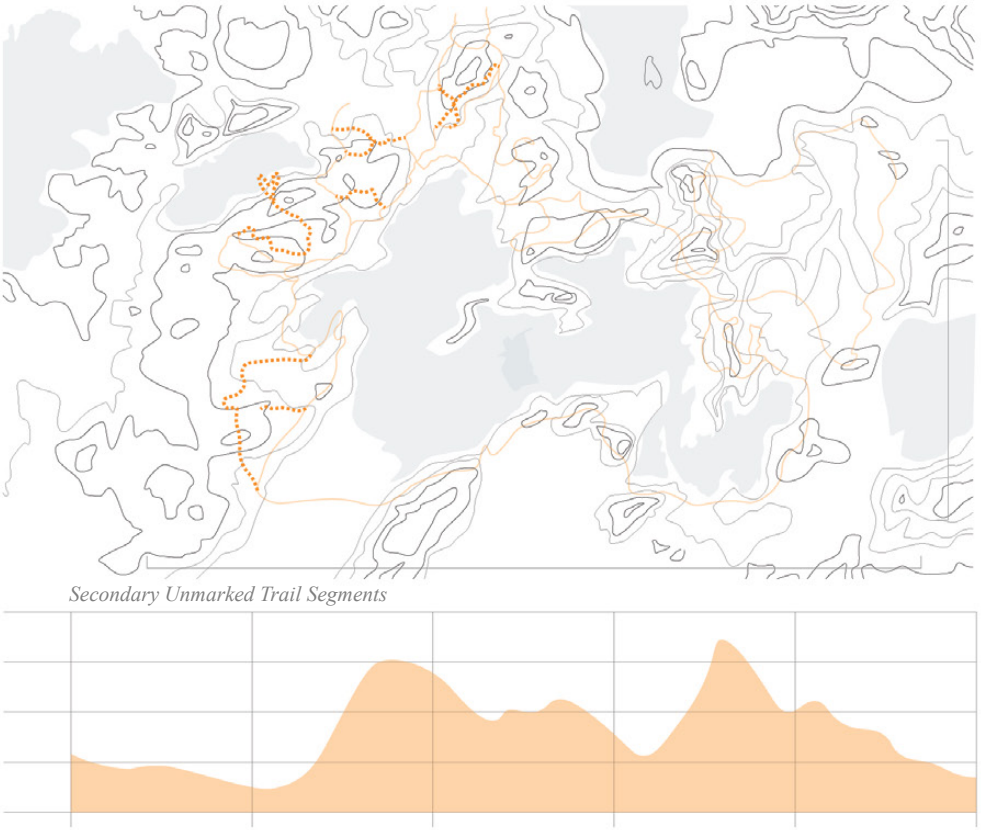


Bioski Trails

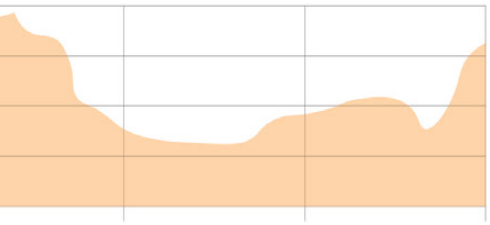


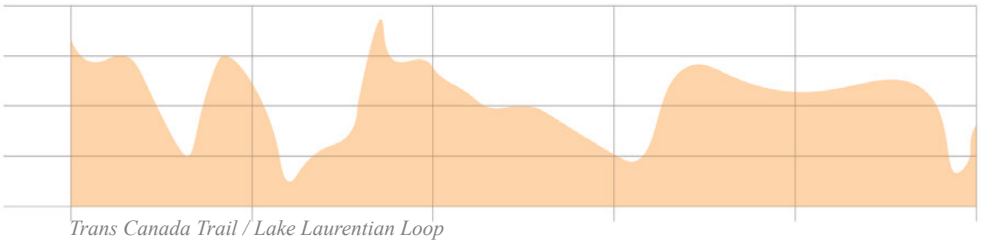
Bioski Trails





Secondary Unmarked Trail Segments





Trans Canada Trail / Lake Laurentian Loop

Fig.21 + 22
(Right) image of the highest peak looking east.

(Left) from the same site, looking west.

End Notes

22 Nancy Turner, "Indigenous Peoples' Medicine in Canada" *The Canadian Encyclopedia*, accessed April 27, 2022, https://www.thecanadianencyclopedia.ca/en/article/native-medicines.

23 Irving Hallowell, *Nipissing-1927*. p.5.

24 Hallowell. p.11.

25 Christine Charrette, "Indigenous Experiences around North Bay," *Northern Ontario Travel*, August 7, 2018, https://www.northernontario.travel/indigenous/indigenous-experiences-in-north-bay-and-lake-nipissing.

26 Hallowell, p.12.

27 Ibid. p.12.

28 Ibid.

29 Ibid.

30 "Watershed Map & Info - Conservation Sudbury."

31 William Lautenbach, Jim Miller, and Peter Beckett, "Municipal Land Restoration Program: The Regreening Process," accessed January 22, 2022, https://www3.laurentian.ca/livingwithlakes/wp-content/uploads/2012/06/Chapter-8.pdf. p.114.

End Notes Cont.

32 Gunn, Pearson, and Keller, "The Past, Present and Future of Sudbury's Lakes," p.199.

33 Ibid.

34 Ibid.

35 Ibid.

Part III - Teachings

Fig.23
Yarrow
"Contains aromatic compounds including menthol and thujone; leaves, roots and flowers all used; leaves chewed for colds and coughs."[36]

Indigenous Land-based learning, experiential education and Land conservation are sums of the same root. The Indigenous people living in Canada have been utilizing the Land as a teaching method for millennia, while Laurentian University and the City of Greater Sudbury have been using the Conservation Area as an outdoor classroom for 60 years.[37] This site is rich in historical landmarks, stories and opportunities to learn. While the site is currently used for skiing, ecology research and pleasure, it has much more to offer. After exploring the existing infrastructure on the site, there are immense possibilities to combine the previously iterated fields of research that help create a space to learn, explore and respect the Land. Land-based education can help reconnect our innate relation to the earth all within the respected cultural sensitivity involved with working with the Indigenous community to help people understand the importance of respecting and understanding the Land we walk on every day.

3.1. Land-Based Education

Educational programming will seek to indigenize Western teaching methods with the implementation of Land-based learning. As education is already part of the system within the Conservation Area, this is an excellent opportunity to add existing infrastructure to ensure a path towards reconciliation through education. The users are not specifically defined due to the vast amount of programs and "situational learning" occur, meaning elementary or high school trips, as well as programs within the university. Laurentian University programs that already benefit from this green-land include the Outdoor Adventure Leadership (ADVL) program, Biology, Heath Sciences and many others.[38] While conducting literature reviews about Land-based education, stories about a young woman and her connection to the Land kept rising to the surface. The author uses Nishnaabeg stories to advocate for the indigenization of land-based learning as a pedagogy for educational systems. Simpson tells the tale of the Maple sugar tree as an analogy to communicate the importance of land-based learning, its values to the people, and it's spiritual meaning.[39] The author explains how this Land-based pedagogy is necessary for the nurturing of First Nations cultures and the Indigenous people who hold valuable skills and knowledge to rebuild an educational system that does not discriminate nor undervalue Indigenous cultures and traditions. For millennia, Indigenous peoples have been guardians of the Land, water, and ecosystem preservation.[40] By including the Indigenous communities in areas such as conservation, the benefits for both groups are countless. While many knowledge keepers and Indigenous Elders have a connection to the Land and Grandfather Teachings that would benefit the youth, involving the Indigenous people to share, teach and inspire communities will help maintain and expand

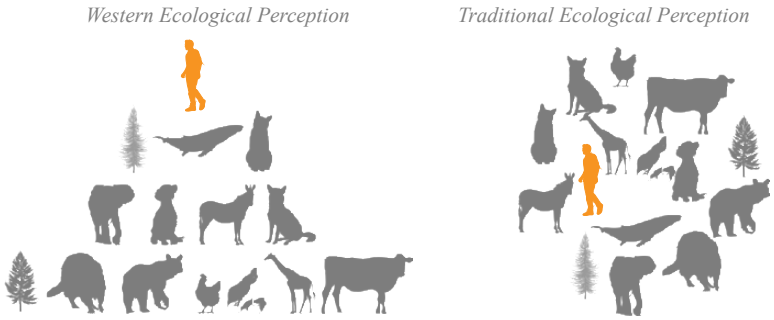
conservation areas.[41]

3.2. The Grandfather Teachings

Elder Art Petahtegoose has been teaching his wisdom in the "round-room" at Laurentian University for the entirety of the academic year. Attending has been a step towards building knowledge of the Land, the spirituality of the environment and the teachings that have been passed down for generations. The teachings are moving and deeply rooted in their context. By allowing "outsiders"to listen to his profoundly emotional stories and knowledge, Elder Art is doing his diligence of passing on his "Grandfather Teachings".[42] Art has been teaching traditional and cultural knowledge through hands on experience. The teachings in their own right, tell us that education is a narrative about stories, whether it comes from the connection through experience or listening. Although there are several elders within the Laurentian community, each and every Elder has an important and unique responsibility to guide the people.

"Original Indigenous methods of educating children extend beyond the walls of indoor space, learning is viewed as sacred and holistic, as well as experiential, purposeful, relational, and a life-long responsibility."-Leroy Littlebear[43]

One fundamental aspect of Art's teachings that always comes back is the notion of togetherness. Togetherness with wilderness, nature and Land. While Western ideologies tend to have an egotistic approach to "The Apex Predator" (a.k.a humans), Art and Indigenous people always see themselves as one with nature.[44]



This relationship to the Land is based on a great spiritual connection to Mother Earth that guided indigenous peoples to practice respect, humility and reciprocity.[45] As they are "care takers" of Mother Earth, Indigenous people have a tremendous respect for water, air and fire. While taking part in hunting, fishing and gathering, it is common for Indigenous people to acknowledge and thank the animals being gathered. By doing so, the animal is now part of the cyclical way of life, without being dehumanized as disrespected. This process does not only apply to hunting or gathering, but also to the sharing of knoweldge. There is an immense importance of asking and offering when asking for help or knowledge from an Indigenous Elder or knoweldge holder.

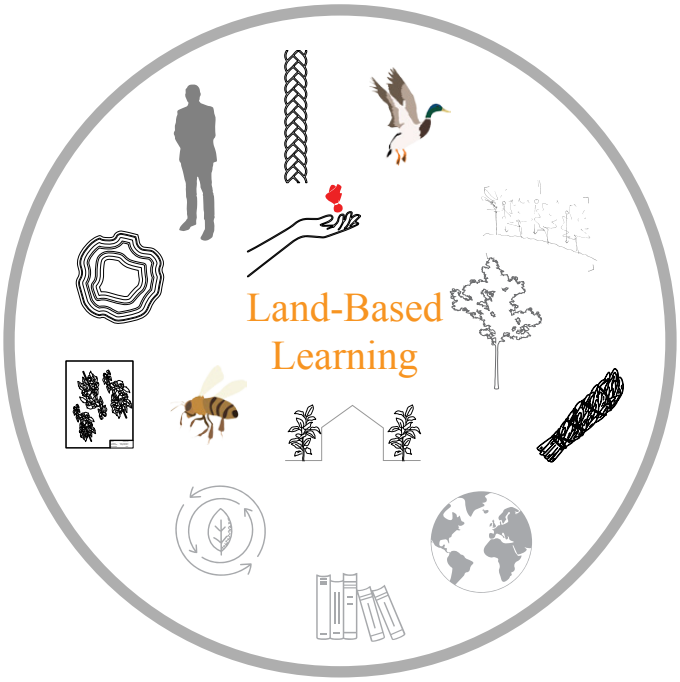
"If you're writing with your pen, you aren't listening to me. It's so hard for people to listen now because they think learning is writing and understanding second hand knowledge. Learning is listening, you shut your [points at mouth] and open your [points at ears]."-Elder Art Petahtegoose[46]

Sitting in on Art's teachings, there are a handful of words that keep coming to the surface of every conversation. Wisdom, Land, learning, truth and respect.

Fig.24 + 25
(Left) Humility, a diagram showing the reciprocity involved when being one with the Land.

(Right) Cycle of Land-based learning understanding of how the Land and the people are connected as one, and utilizing the resources in a reciprocal exchange.

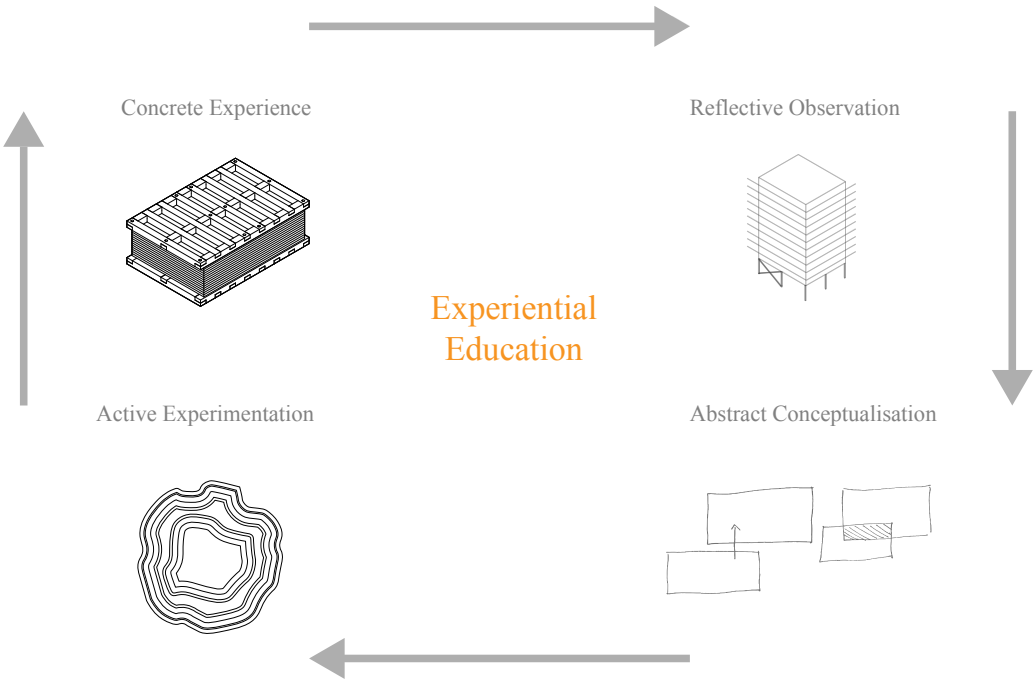
These words have such depth each time they come out of Art's mouth, it makes you think twice about the *Oxford English Dictionary* definition that everyone knows. Learning from the Land doesn't solely involve praying before you cut down a tree or take the life of a majestic helpless creature, it is about seeing the trees as family, respecting the buck you killed and thanking it for feeding your household; it is about living in harmony with the elements and figuring out a way to reflect on your ideas and views. The Indigenous people have always used Land-based knowledge as a survival tool. By understanding this, it is evident that learning does not have to withstand Western systematic approaches, but indigenizing the current system can create a plethora of Land-based learning opportunities which are experienced by various cultures. Throughout the site visits, there was a deep reliance on remembering research to find and locate traditional medicines in the wild. As a settler using second-hand knowledge to pinpoint plants and medicines, this journey was eye-opening and bewildering.



Although settlers have written about traditional medicines and Land-based education, it can be easily misrepresented or appropriated.[47] The fieldwork conducted led to the making of a plant lexicon, where the data collected was to be graphically represented with seasonal harvesting, medicinal uses and plant name. Although limited, this method of data collection released an opportunity to explore the sites with a different eye, since creating the connection to the Land is a method of respect through spirituality.[48] The notion of western colonial academics can easily be challenged with the resurgence of the First Nation culture with the help of Land-based education and deep Indigenous knowledge. Reintegrating the Land with Indigenous knowledge can't be categorized through Western education systems. Land is the most important aspect of learning since Land encompasses all, the ability to learn Western knowledge through reconciliation can be the start of a new educational system. An interview with Dr. Glen Coulthard conducted by the National Centre for Collaboration in Indigenous Education though the University of British Columbia, explains the rationale and the importance of Land-based education in relation to decolonization and resurgence.[49] A short video documentary delves deep into the history of the Indigenous Peoples of Canada and how they utilize the Land for health and educational purposes. Coulthard explains in plain terms how innate tasks of the cultural traditions of the Indigenous Peoples are always translated into learning opportunities.

Fig.26
Experiential Education
The cycle of experiencing, reflecting, thinking and doing enables people to apply and connect theoretical knowledge with real-life experience.

He goes on to describe an example of moose hide tanning, and how this practice involves the ancestral knowledge passed down to properly harvest the materials while creating minimal waste. Coulthard explains the use of these teachings can often be used in a more contemporary context, similarly to the Outdoor Adventure Leadership (ADVL) program using the Conservation Area as an outdoor classroom as a hands-on teaching method. The leassons learned in the field can teach humans about govenrance, women's roles in governance and decolonization; hunting and the built-in reciprocity of laws in relation to hunting teaches us how we form political relationships not only within our nations but other nations.[50] Articulating how these connections are made creates an immediate sense of cultural awerness that can help take a step towards Indigenizing the Western educational system.



End Notes

36 Nancy Turner, "Indigenous Peoples' Medicine in Canada" *The Canadian Encyclopedia,* accessed April 27, 2022, https://www.thecanadianencyclopedia.ca/en/article/native-medicines.

37 "Watershed Map & Info - Conservation Sudbury."

38 Jim Little, "Conversation With an Outdoor Leader" (*Laurentian University Campus*,) 2021.

39 Leanne Betasamosake Simpson, "Land as Pedagogy: Nishnaabeg Intelligence and Rebellious Transformation," *Decolonization: indigeneity, education & society 3, no. 3 (2014)*. p.25.

40 Ibid. p.25.

41 Ibid. p.28.

42 Art Petahtegoose, "The Grandfather Teachings" (*Laurentian University Campus*,) 2021.

43 "Teachings | CASS Alberta," accessed December 17, 2021, https://cass.ab.ca/indigenous-education/teachings/.

44 Petahtegoose.

45 Ibid.

46 Ibid.

47 Leanne Betasamosake Simpson. p.9.

48 Ibid.

End Notes Cont.

49 Glen Coulthard, "Land Based Education in Denendeh: Interview with Dr. Glen Coulthard - NCCIE," *Indigenous Education The National Centre for Collaboration*, accessed December 1, 2021, https://www.nccie.ca/videos/land-based-education-in-denendeh-interview-with-dr-glen-coulthard/.

50 Ibid.

Part IV - Interventions

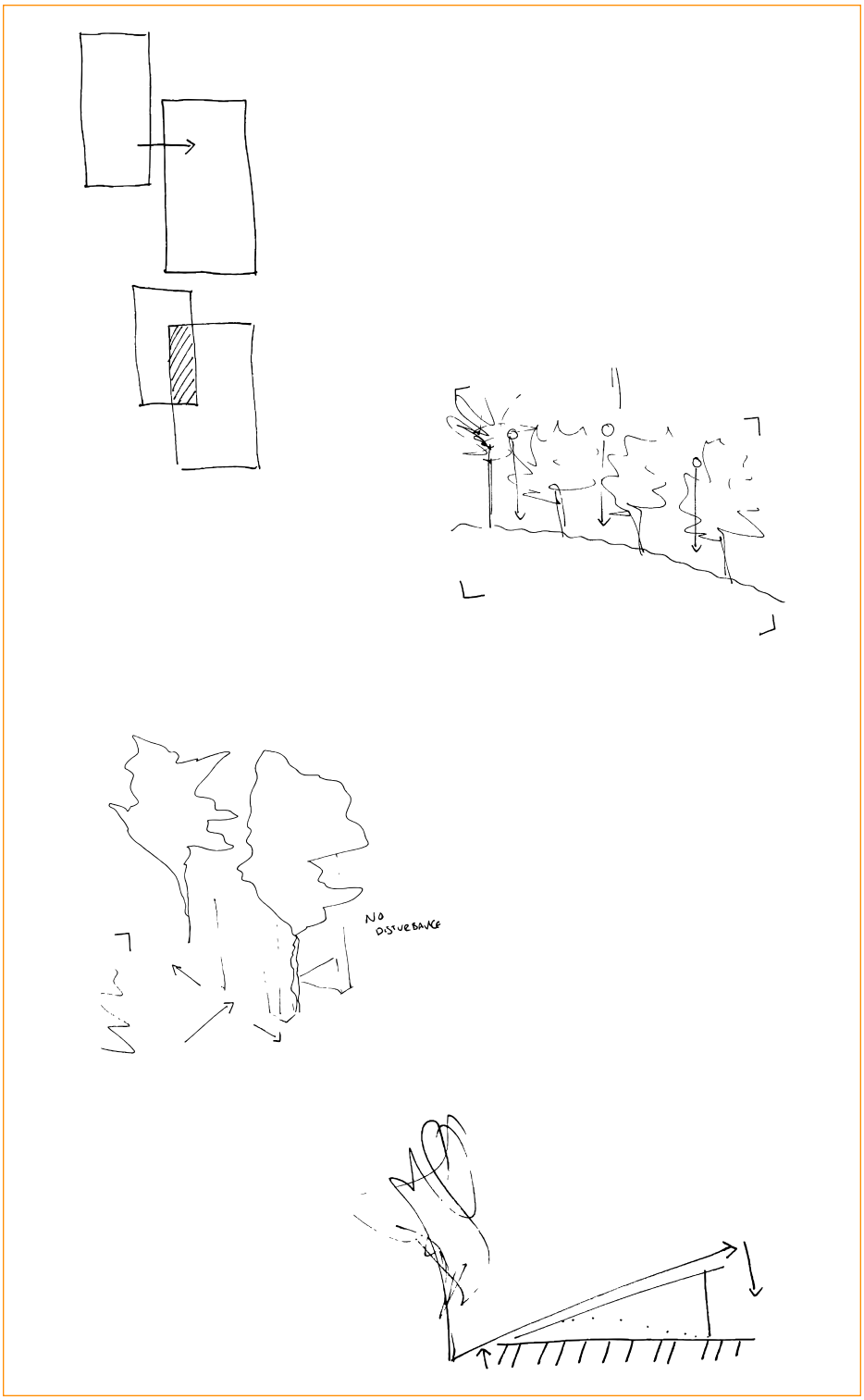
Fig.27
Pinecones
"Pine tree gum is chewed to soften it and is then placed on cuts or burns to heal and help soothe pain. Toothache can be soothed by biting on a pinecone; this also helps to suck out any dirt or abscess causing the pain. Chewing on a pinecone can fight mouth infections, and the cones can also be used to make a tea to treat skin infections or for general cleaning. Young pinecones are best."[51]

The design project lies at the intersection of Land-based learning, environmental conservation and education to create multiple small-scale interventions across the Lake Laurentian trails and shoreline. The architectural interventions on the Lake Laurentian Conservation Area (LLCA) will rekindle the ancestral knowledge of the Indigenous community of Sudbury while indigenizing the Western educational systems to create a sustainable method of land-based learning. Utilizing and supporting the pre-existing programs activated on the site will encourage the community of Sudbury to acknowledge and take a step towards reconciling traditional Land-based educational values into the community of Sudbury. The project aims to create a set of frames and guidelines concerning light and sustainable infrastructure. As the project's focus is creating a connection to the Land, the proposed infrastructure will address ecological sensitivity, creating habitable moments, all while complementing the site. The architectural interventions will create new ways of experiencing the Lake Laurentian Conservation Area, while heightening the human experience by designing infrastructure that is not invasive and that draws from its unique location.

4.1. Building light on the Land

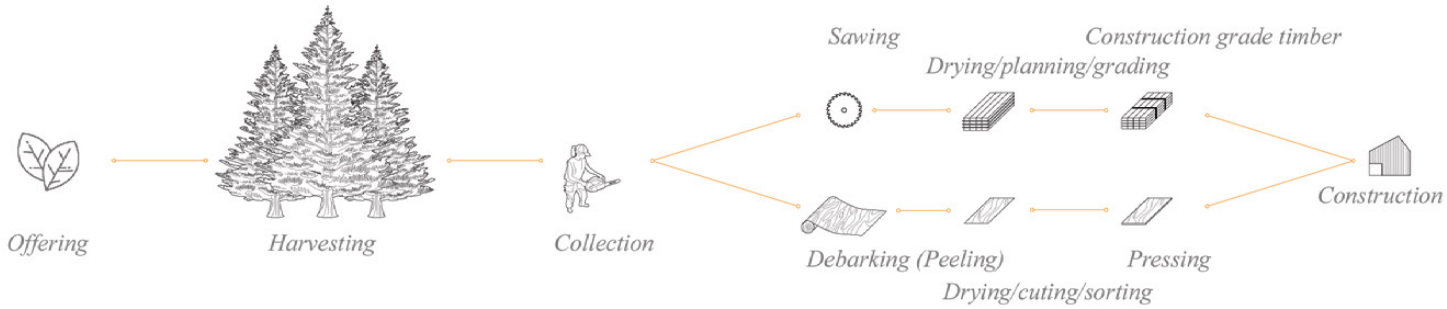
Referring to architects Alfred Waugh and Pierre Thibault, having a responsibility towards caring for the Land can be part of the methodology and process of a project. This was conceptualized from the early stages of the project, such as wood harvesting and treating. In typical instances, deforestation is caused by converting forests into pastures or settlements, for fuel harvesting, mining and unsustainable logging.[52] This plays a significant role in the global crisis of climate change. By contrast, the Forest Stewardship Council includes the harvesting of trees and the management and treating process of post-harvesting. Although the primary goal of commercial forestry is to create a sustainable environment while harvesting as much material as possible to create building materials, paper and other industrial products, this creates environmental distress for countless ecosystems. Forestry is the primary disturbance of forest ecosystems, followed by regeneration and silvicultural activities like site preparation, thinning, scrubbing and pest control. The past ten years of logging have produced over 1200 million tons of CO_2 emissions within Canada alone.[53] The vicious cycle of mass harvesting is a problem propelled by its own deterioration that can be seen as the opposite of building light on the Land.

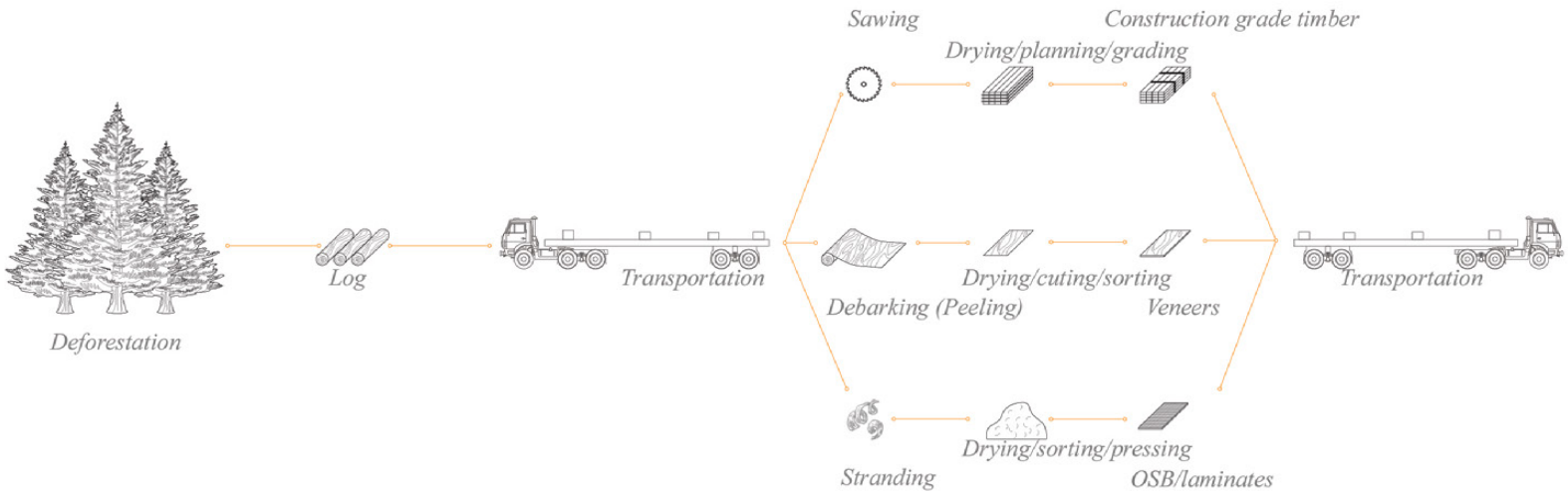
Fig.28
Setting three principles to ensure the project does not disrupt the Land.
1) Reconnecting people to the notion of experiential education
2) Designing with the land and not against it
3) Implementing light architecture without disturbing the landscape


No
DISTURBANCE

By logging in bigger masses, the forests cannot absorb CO_2 emissions caused by the act of harvesting, thus creating an endless loop of ecological stress. The need for construction materials will never cause the forestry industry to stop its operation. However, when taking a step back to understand the severity of this industry, the construction world can start to think of alternative wood harvesting methods. Understandably, when acknowledging and admiring traditional harvesting methods, it is evidently the option that takes the most knowledge, skill and time. While the parameters of projects are usually always time-sensitive, the use of traditional Indigenous wood harvesting methods is often unfeasible. While this might be correct, there are still options to utilize some of the traditional wood-harvesting methods in modern-day projects. This can easily be realized by acknowledging the Land, thanking the Land and appreciating the materials it is giving you. The traditional offerings, collection and harvesting can be done sustainably and respectably, thus eliminating the need to use pine trees collected in Vernon, British Columbia, for a project located in Sudbury, Ontario. Using local materials is a great way to engage the local economy without disturbing much of the landscape. Traditional methods of construction used by Indigenous communities had been collecting local trees, branches and bark to create their distinct building typologies. Taking the construction of a wigwam structure, for example, this process had been carefully thought out to utilize as much as the harvested tree as possible to create a structure that was one with the Land. Saying this, like Waugh and Thibault, the proposed structures that will be placed onto the Conservation Land will be light and disturb only a small portion of the surrounding ecosystems.

Fig.29 + 30
(Top) typical wood harvesting process.
(Bottom) traditional wood harvesting process and the impact it can make on the Land.


Offering
Harvesting
Collection
Sawing
Drying/planning/grading
Construction grade timber
Debarking (Peeling)
Drying/cuting/sorting
Pressing
Construction


Deforestation
Log
Transportation
Sawing
Drying/planning/grading
Construction grade timber
Debarking (Peeling)
Drying/cuting/sorting
Veneers
Stranding
Drying/sorting/pressing
OSB/laminates
Transportation

4.3. Community Engagement and Programming

Considering that this thesis touches on Land conservation, experiential education and Land-based learning, it was imperative to involve community members to create a platform where all ideas could be discussed and interpreted. Understanding how not just one group, but how various people use the Land differently, involving the community determined the architectural programming. Engaging Conservation Sudbury, the Outdoor Education programs at Laurentian University, and Indigenous scholars, a master list of programs was specified. The selected programs, coming from these three groups, was a way of understanding what would benefit the Lake Laurentian Conservation Area. From this list, overseeing the relations and overlaps between projects distilled the programming to four architectural interventions. Pulling out not only their wants but listening to them and finding out keywords in simple conversations helped understand how the programming could be distilled and implemented on the site. The first intervention will be a floating boardwalk, increasing the accessibility of the site while creating an addition to existing trail segments to improve function and variety.[54] Second, an outdoor teaching space will be located within the Conservation Area boundaries to create a place of gathering, where experiential learning can occur in an indoor-outdoor environment. Third, a covered observation tower will be implemented on the Lake Laurentian trail segment to explore the site's history and the people who occupied the Land far before Western colonizers. Lastly, the design of Indigenous medicinal gardens will be explored to shed light on the natural botany that the First People of Canada have practiced for millennia.[55]

Fig.31
Involvement and connecting different stakeholders together to create a platform of ideas.

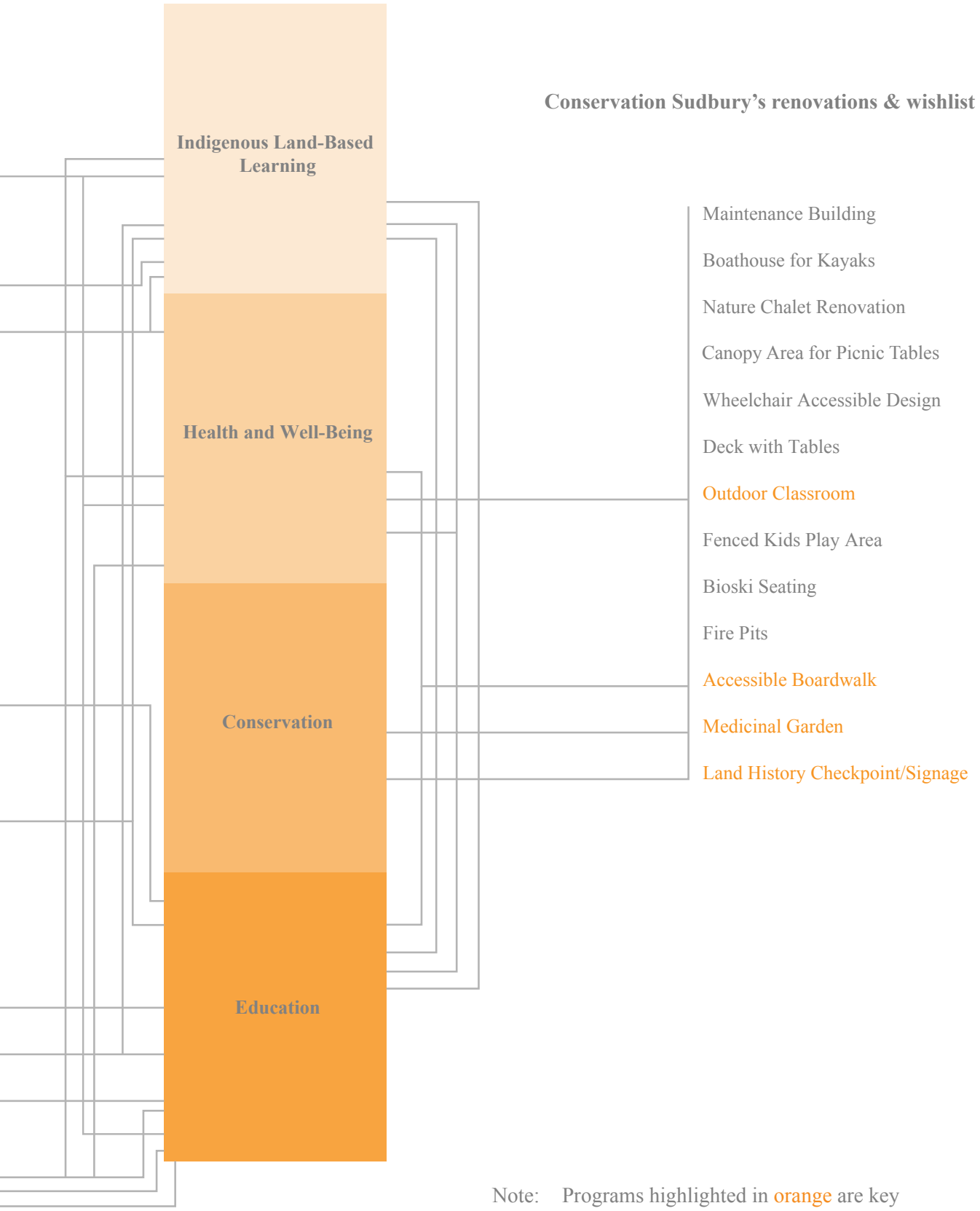

PROFESSORS
CONSERVATIONISTS
ELDERS / INDIGENOUS COMMUNITY
CONSERVATIONISTS
PROFESSORS
ELDERS / INDIGENOUS COMMUNITY

Fig.32
Understanding the needs and wants of the stakeholders, and distilling the programming.

Laurentian University - Outdoor Leadership and Adventure (ADVL) program curriculum

Professional Development Seminar
Adventure Leadership
Outdoor Adventure
Leadership Practicum
Expedition Planning
Exercise Physiology
Outdoor Facilitation
and Team Building
PHED 3905 6.0
ADVL Internship
PHED 4209 1.5
Winter Camping
PHED 4446 3.0
Risk Management
in the Outdoors
Nutrition
3 Credits Any Theory Elective
Total Credits 31
YEAR IV Grade Credit
PHED 4199 1.5
ADVL Senior Seminar
PHED 3129 1.5
Expedition Leadership Practicum
PHED 4447 3.0
Recreational to Therapeutic Adventure
Climbing & Rescue
PHED 4009 1.5
White Water Canoeing
PHED 4116 3.0
Advanced Outdoor Expedition
Outdoor Adventure Pursuits
PHED 4149 1.5
River Rescue

YEAR I Grade Credits
Professional Development Seminar
PHED 1099 1.5
Outdoor School I
PHED 1006+Lab 3.0 Exercise Science,
Wellness, and Health
PHED 1106 3.0
Human Movement
PHED 1206 3.0
Perspectives of Physical Education
and Sport
PHED 1506+ LAB 3.0
Anatomy & Kinesiology I
PHED 1507+ LAB 3.0 Anatomy & Kinesiology II
PSYC 1105 6.0
Intro. to Psychology
(6 credits of INDG elective)
YEAR II Grade Credit
PHED 2198 1.0
Professional Development Seminar
PHED 2109 1.5
Wilderness Camping
PHED 2259 1.5
Minor Games
PHED 2329 1.5
Cross Country Skiing
Outdoor Education
PHED 2506+Lab 3.0
Physiology I
PHED 2507+ Lab 3.0
Physiology II
PHED 3615 6.0
Wilderness Emergency
Management
Outdoor School II
PHED 2149 1.5
Intro. to Outdoor Living
PHED 2159 1.5
Canoe Tripping Leadership
Total Credits 31
YEAR III Grade Credit



Note: Programs highlighted in orange are key uses that informed me how the LLCA has and will be used for future experiential education.

The four interventions act not as individual components but as a network of architectural responses to create a system of teaching tools that the community as a whole can experience. From there on, diagrams were developed to analyze the correlation between the uses. For example, how land conservation directly impacts almost all the other activities, like hiking access, maple syrup tapping, beaver dam season and experiential education, allows us to see how all of these programs impact one's health and well-being. This informs the uses and the correlations between them and starts to inform primary, secondary, and tertiary uses. Using the existing trail systems, the research helped confirm potential sites, the lack of infrastructure, and the connection between lookout points. Visual, auditory and experiential variables have informed not only the possible locations but also the pros and cons of the existing trail segments. While some hikes are challenging due to rocky conditions and high altitude climbs, the mapping has identified points where infrastructure could help support the use of these trails. "We tried to create a parallel between the Indigenous Studies program to create a huge traditional water gathering trip to understand how the First People collected water before settlers.."[56] This decision by the CCAA of cutting the Indigenous relations programs at Laurentian is taking a step backwards from reconciliation. This thesis will create a bridge between conservation, Indigenous Land-based learning and current educational systems and infrastructure to create a sustainable relationship that can be implemented throughout various projects beyond this thesis. Conversations between stakeholders allowed the thesis to grow into something that truly reflects the communities' vision, making it a project where the role of the architect includes listening, gathering information and stories, then translating this into design.

The quotes to the right indicate the communities and "stakeholders" perception of the Conservation Area in its current state. These were acquired throughout many conversations with various groups, trying to udnerstand what they want and what they need.

"Have you ever heard of Bernoulli's principle? Well, my father and my people have known about this principle for thousands of years, before the Western world had come to Canada. We used to practice this [principle] by gathering a wheat straw, making a cup out of birchbark, gathering a variety of marshland ingredients, adding water, and using it as a natural bug repellant."

"A medicinal garden would be great to learn about the traditional plants that are in the area, not only seasonally but something we could harvest and teach about year-long"

"It doesn't make sense teaching outdoor education from a classroom, it just doesn't"

"An outdoor classroom is something that would help us convey how the conservation area works"

"We lack storage for all our equipment, either it sits outside or it's stored way far from our building"

"Being one with the Land is about the immediate and textile environment, not about classroom spaces. The Land has been teaching us for years, we just have to listen"

"We want something that everyone can enjoy, maybe something that doesn't limit us to the chickadee loop"

"I had wanted to approach someone at Laurentian University a couple of years ago about doing something to recognize the land that the Lake Laurentian Conservation Area sits on"

"Original Indigenous methods of educating children extend beyond the walls of indoor space, learning is viewed as sacred and holistic, as well as experiential, purposeful, relational, and a life-long responsibility"

End Notes

51 "Trees - Medicinal Substances - Traditional Medicine - Nunavimmiuts - Avataq," accessed April 27, 2022, https://www.avataq.qc.ca/en/Nunavimmiuts/Traditional-Medicine/Medicinal-substances/Trees.

52 "Harvesting in the Boreal Forest," *Ontario Forests*. p.2.

53 Barry Saxifrage, "CO2 Emissions from Forestry Are a Surging Climate Threat. Ottawa Needs to Act," *Canada's National Observer,* November 2, 2020, 2, https://www.nationalobserver.com/2020/11/02/opinion/co2-forestry-Canada-climate-threat-CO2.

54 Daniela Stuewer and Konrad Wiltmann, Conservation Sudbury: How the Land is being used and what is needed, *Zoom Web Call*, January 13, 2022.

55 Professor at the Laurentian University Faculty of Outdoor Education, *Zoom Web Call*, Nov.15, 2021.

56 Will Morin, How the Conservation Sudbury helps traditional Teachings, *Zoom Web Call*, February 3, 2022.

Fig.33
Views from the North-East Peak, Lake Laurentian Loop.

Part V - Community Design

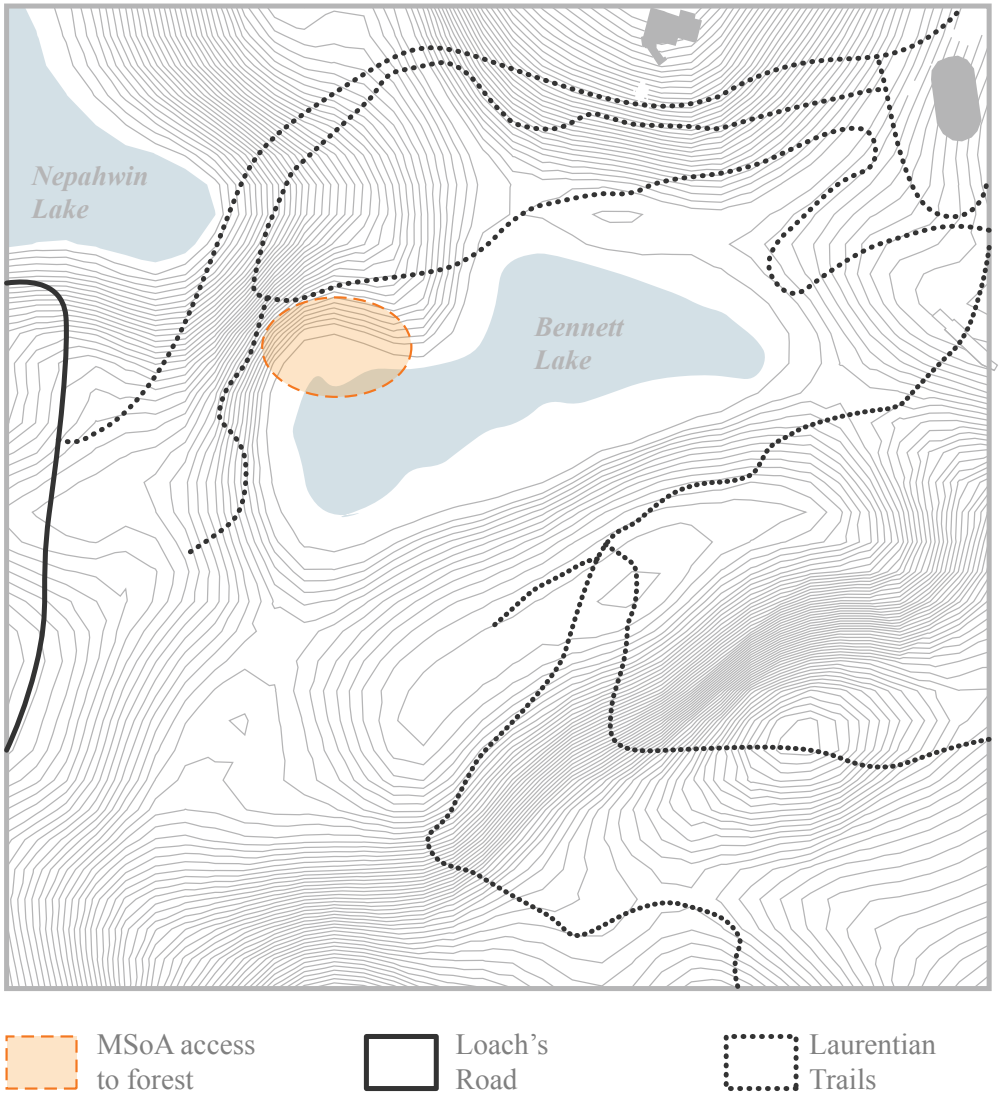
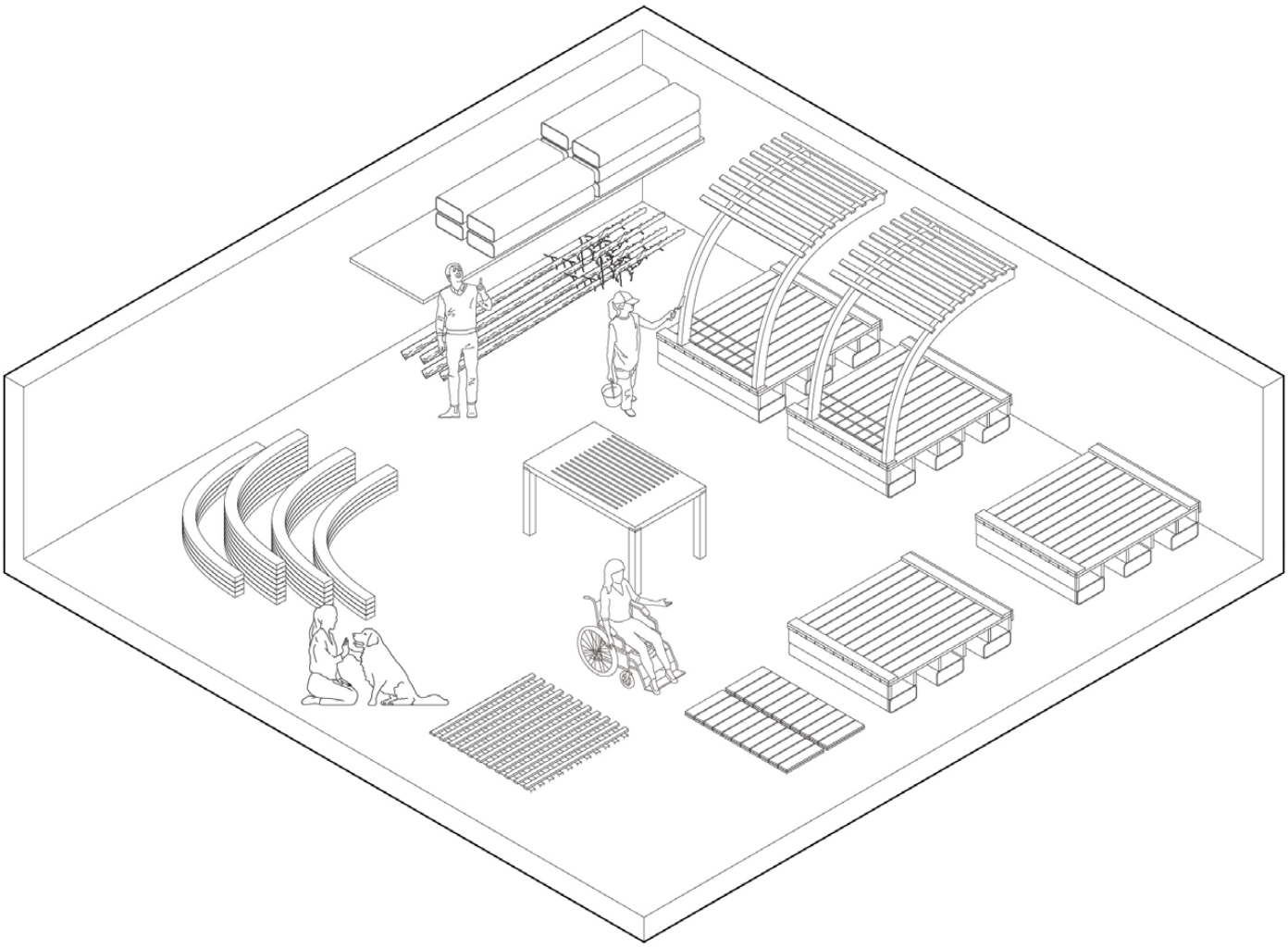


Fig.34
The MSoA forest is a local resource dedicated to harvesting wood for projects such as design builds, material explorations and any related project involving the school of architecture. Being underused, this thesis aims to teach students and community members how to harvest materials with an Indigenous elder while utilizing the local lumber on the Laurentian University campus.

Involving the community was a critical factor in determining the architectural programming. Ensuring the interventions will allow the community to harvest, build, and learn about indigenous traditions will also be supplemented through the construction process. The four interventions have been designed to involve community volunteers in the construction and installation process, teaching members of the community basic construction methods in a safe and engaging community setting. The experiential learning pedagogy will start with the harvesting, utilizing local resources located in the McEwen School of Architecture (MSoA) forest to properly gather materials with an Indigenous Elder. This will build a solid foundation for the reciprocal exchange between Land and people.

The Boardwalk as an extention to the community

The community will be part of the modular building process, learning how to use the natural materials, building techniques.



Aspiring that these projects will educate on-site, the goal would be to involve the community in construction, adding another layer of community participation. The boardwalk will be a teaching tool for volunteers to learn about bentwood and straightforward building methods like how to create a floating platform.

The Gardens as an extention to the community

Being part of the building process will give an opportunity to learn new construction skills, wood bending teachings and a chance to understand the medicinal botany that will be placed within the gardens.

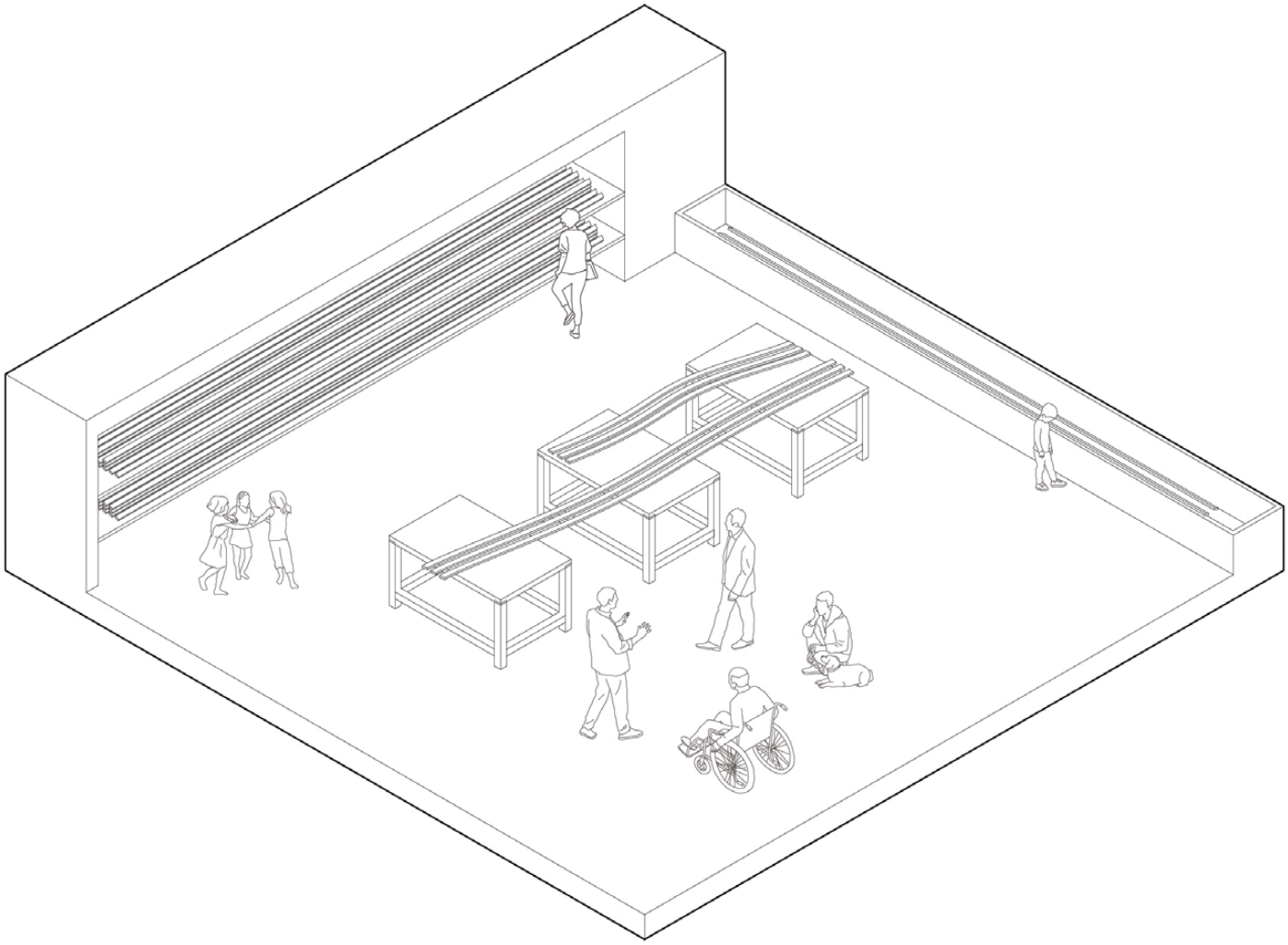


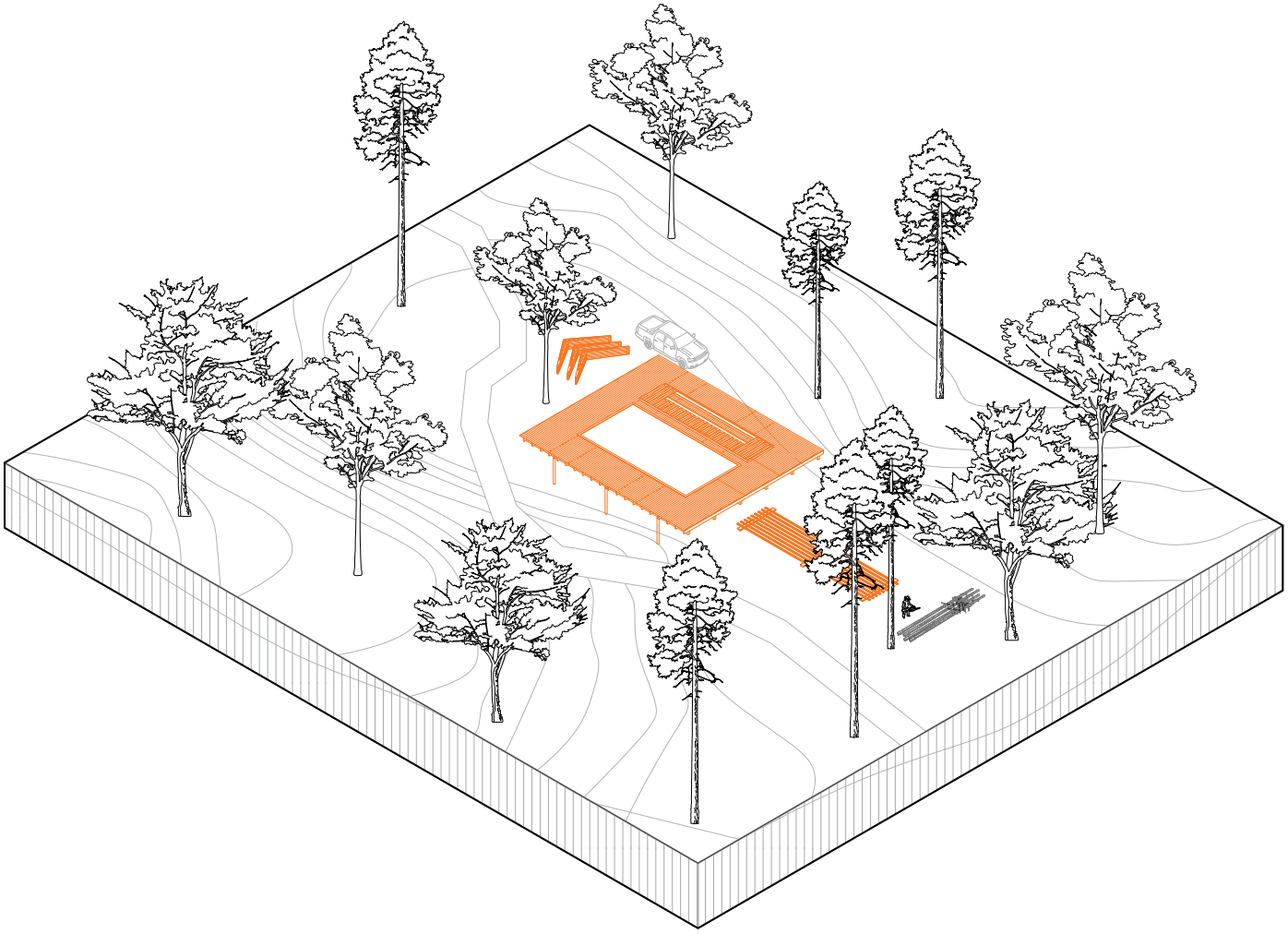
Fig.35 + 36
(Left) communicating the community involvement through makerspaces.

(Right) using members of the community to help with the construction of the gardens.

If possible, the materials would be respectfully harvested from the Conservation Area's birch trees for the gardens. Bringing the trees into a woodshop, the logs would be cut and planed into 1"x4" strips to create bent wood structures. The process of soaking, steaming and clamping the wood to create organic forms will teach the community about indigenous building strategies.

The Learning and Teaching Space as an extention to the community

The community will be part of the modular building process, learning how to use natural materials and building techniques.



On a bigger scale, the teaching space will give volunteers a greater sense of the building typologies of a typical stick-frame building. By harvesting materials, milling them off-site and transporting them back to the desired location, the assembly will allow the community to be engaged and learn how to build a structure from the ground up while respecting the Land.

The Lookout Tower as an extention of the community

This structure will teach the community how to build a network of connections togther as one. The lesson that this intervention will bring is the challenge and necessity of working together as one.

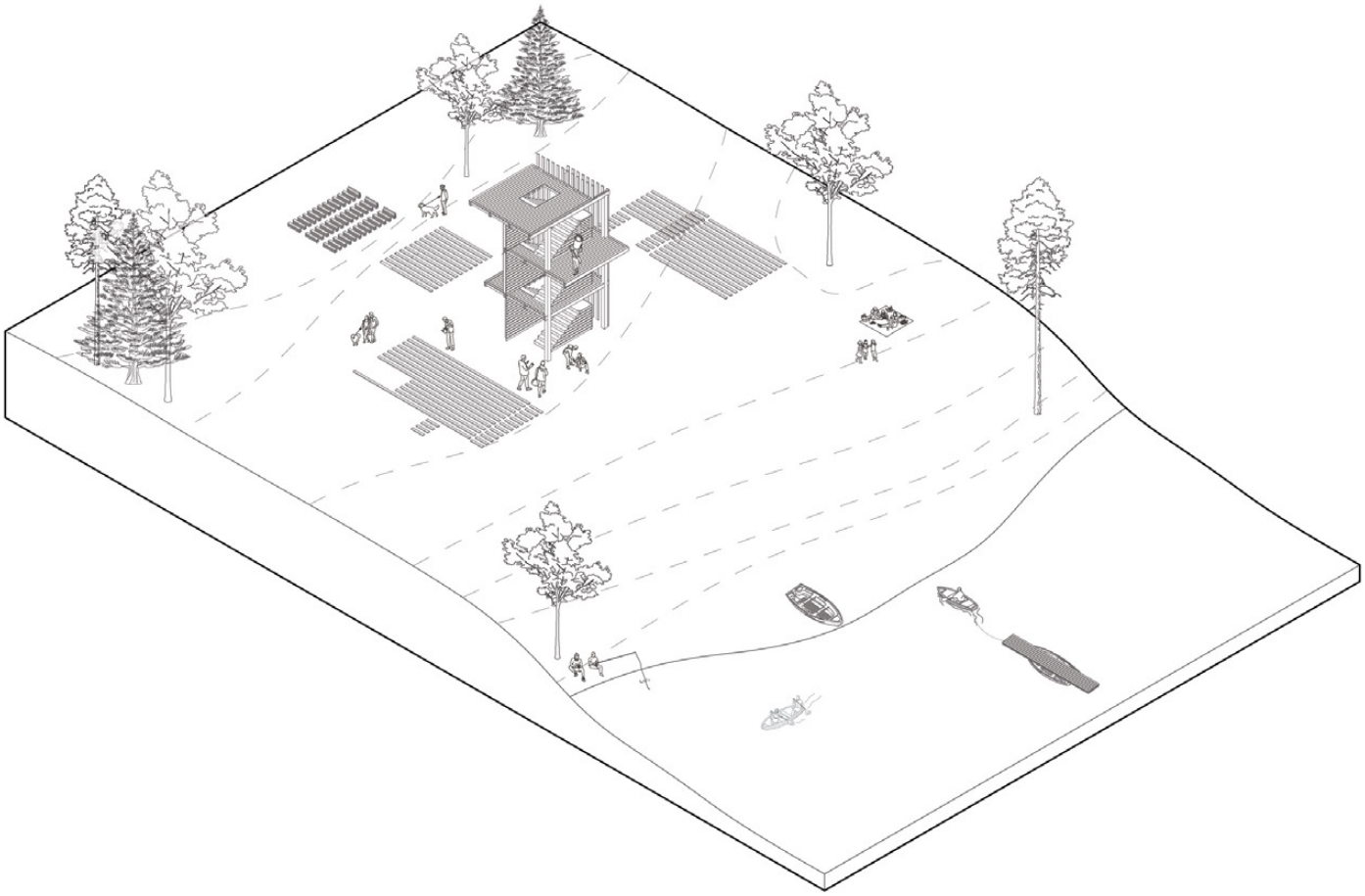


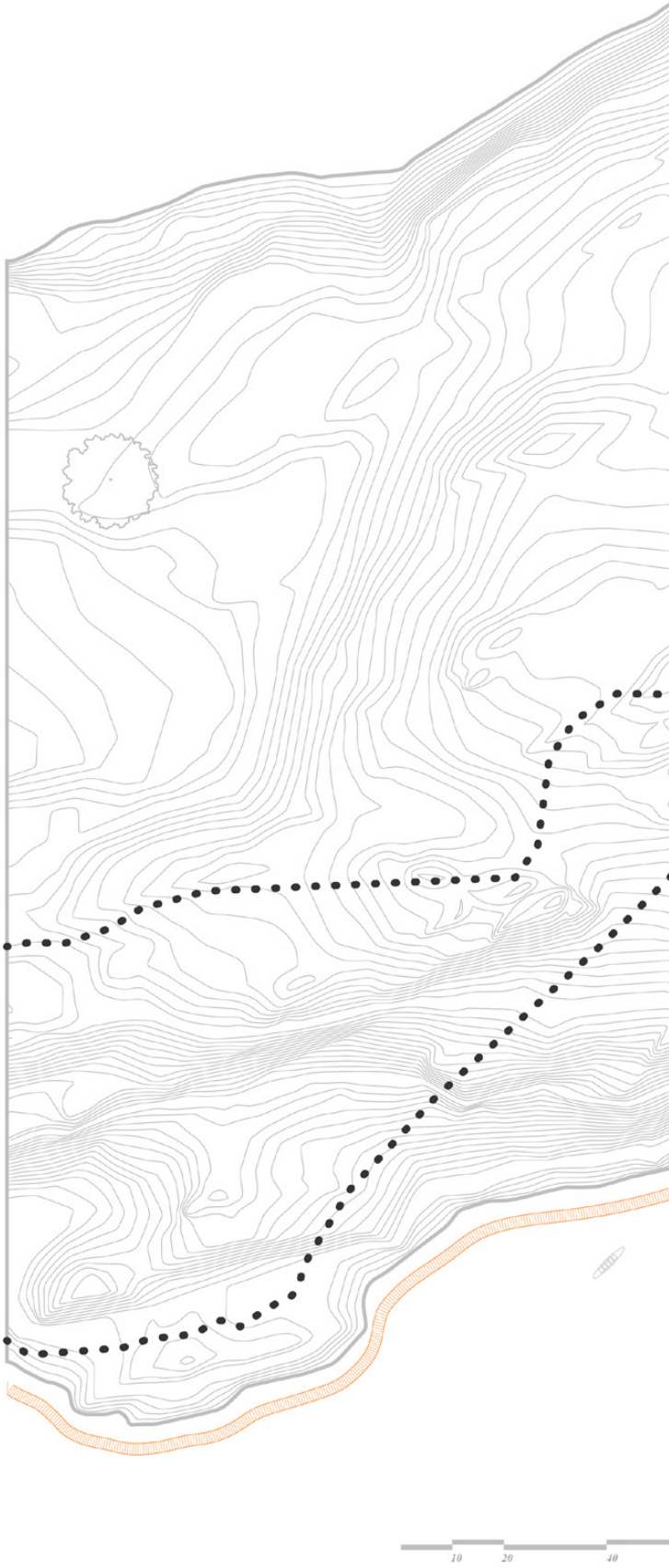
Fig.37 + 38
(Left) showing the logistics of building in a remote site, vehicle access is important for material transportation

(Right) while still remote, the tower is designed so all materials can be transported via Lake Laurentian, to minimize trail disruption.

Phased as the last intervention on the Conservation Land, in hopes that the other installations are a success, this lookout tower will, in theory, try to fuse the community as one, rallying through struggles to accomplish a set of architectural interventions that will benefit everyone.

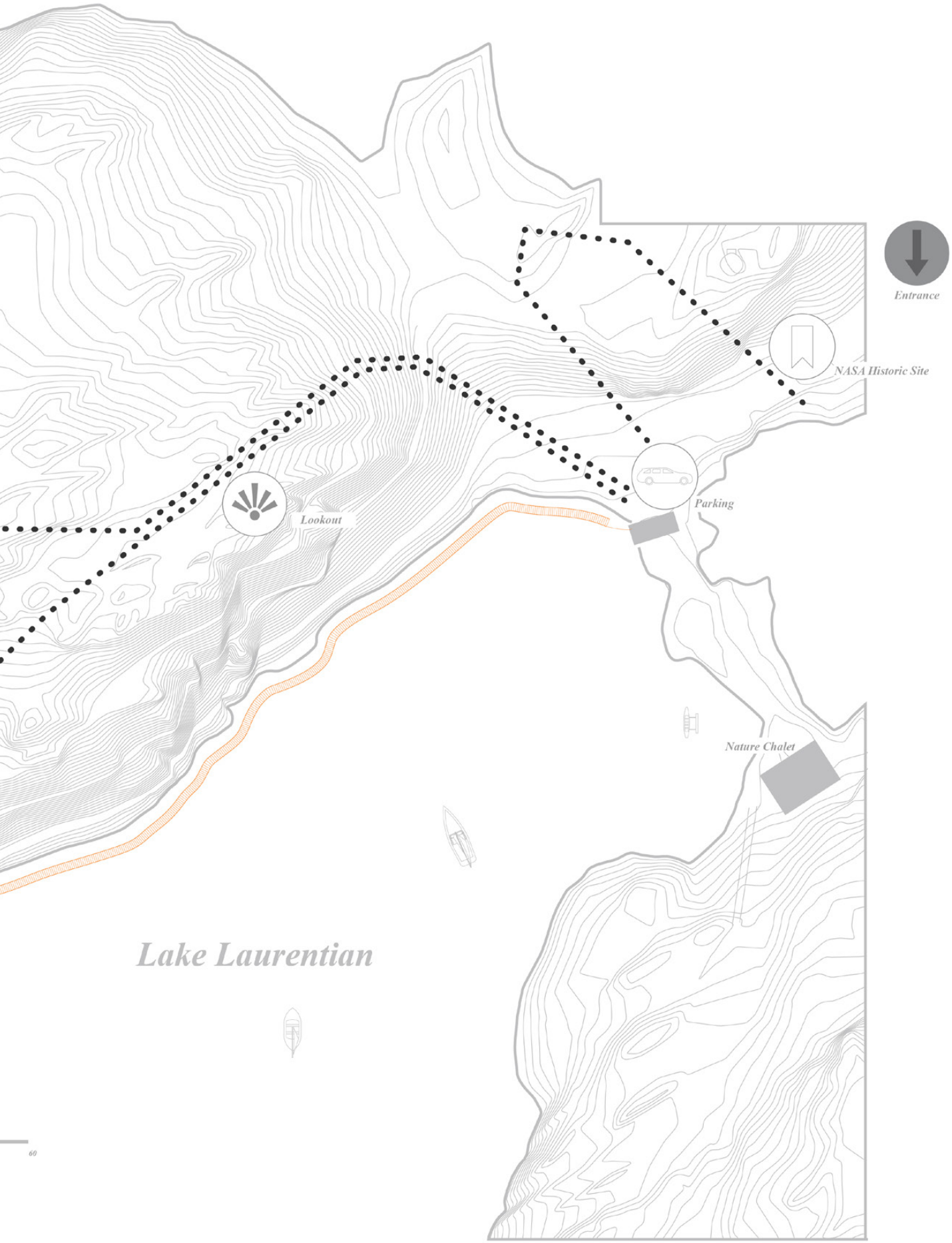
5.2. The Boardwalk.

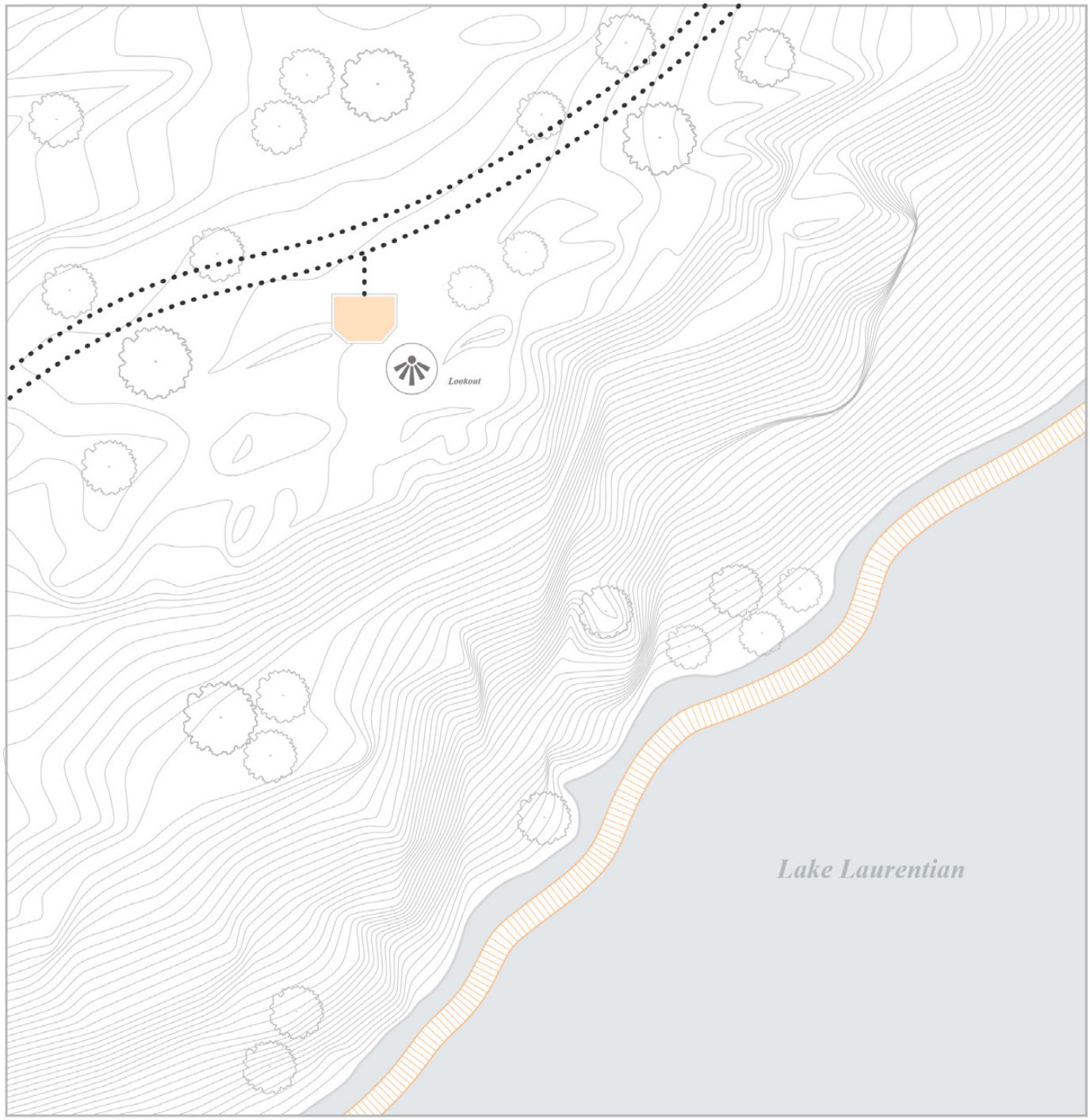
Fig.39
Looking at the site for the boardwalk at a larger scale to understand the topography.



Being an extra route to the Lake Laurentian Loop, the proposed Floating Boardwalk will supplement the pre-existing active trail segment. Considering the Lake Laurentian Loop occupies steep and sometimes dangerous terrains to the inexperienced hiker, the Floating Boardwalk will eliminate the need to climb these abrupt landscapes while still enjoying the Conservation' Area's beauty and resources.

With the addition of the proposed Floating Boardwalk following the Lake Laurentian shoreline, the addition allows a wider audience to enjoy the Lake Laurentian Trails. Furthermore, this will add a new "trail segment" to the Points Trail Loop, allowing hikers to hike up the peaks, then come back around via the Floating Board-walk.

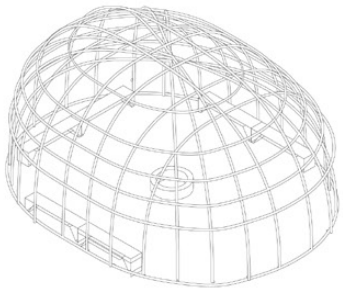

Entrance
NASA Historic Site
Parking
Lookout
Nature Chalet
Lake Laurentian
60


Lookout
Lake Laurentian

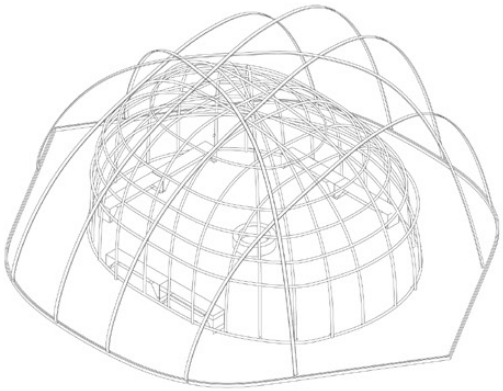
The Boardwalk

Fig.40
Site plan at a smaller scale to identify locations, understanding the relation of pre-existing infrastructures.

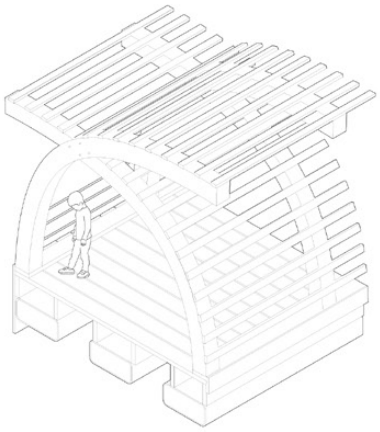
With the addition of the proposed Floating Boardwalk following the Lake Laurentian shoreline, the expansion allows a broader audience to enjoy the Lake Laurentian Trails. Furthermore, this will add a new "trail segment" to the Points Trail Loop, allowing hikers to hike up the peaks, then come down and back around via the Accessible Boardwalk. The proposed Floating Boardwalk will also supplement the pre-existing active trail segment as a different route to the Lake Laurentian Loop. Considering the Lake Laurentian Loop occupies steep and sometimes dangerous terrain for the inexperienced hiker, the Floating Boardwalk will eliminate the need to climb these harsh landscapes while still enjoying the Conservation Area's beauty and resources. Creating an opportunity for people to connect to the water, this intervention will create a new way to interact with the surrounding environment, learning about the manufactured Lake and its importance to the City of Sudbury.



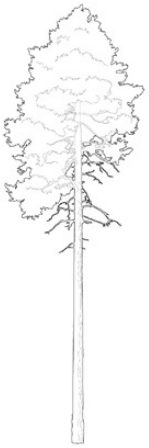
01. Analysing the wigwam typology



02. Understanding the possible bent wood structure

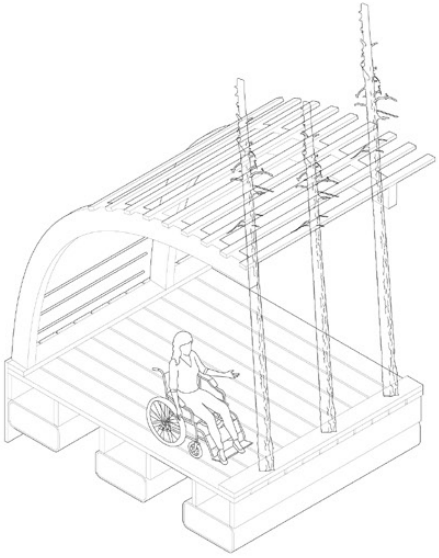


03. Expanding the materials to withstand greater spans



04. Stepping backto see how natural materials can be implemented

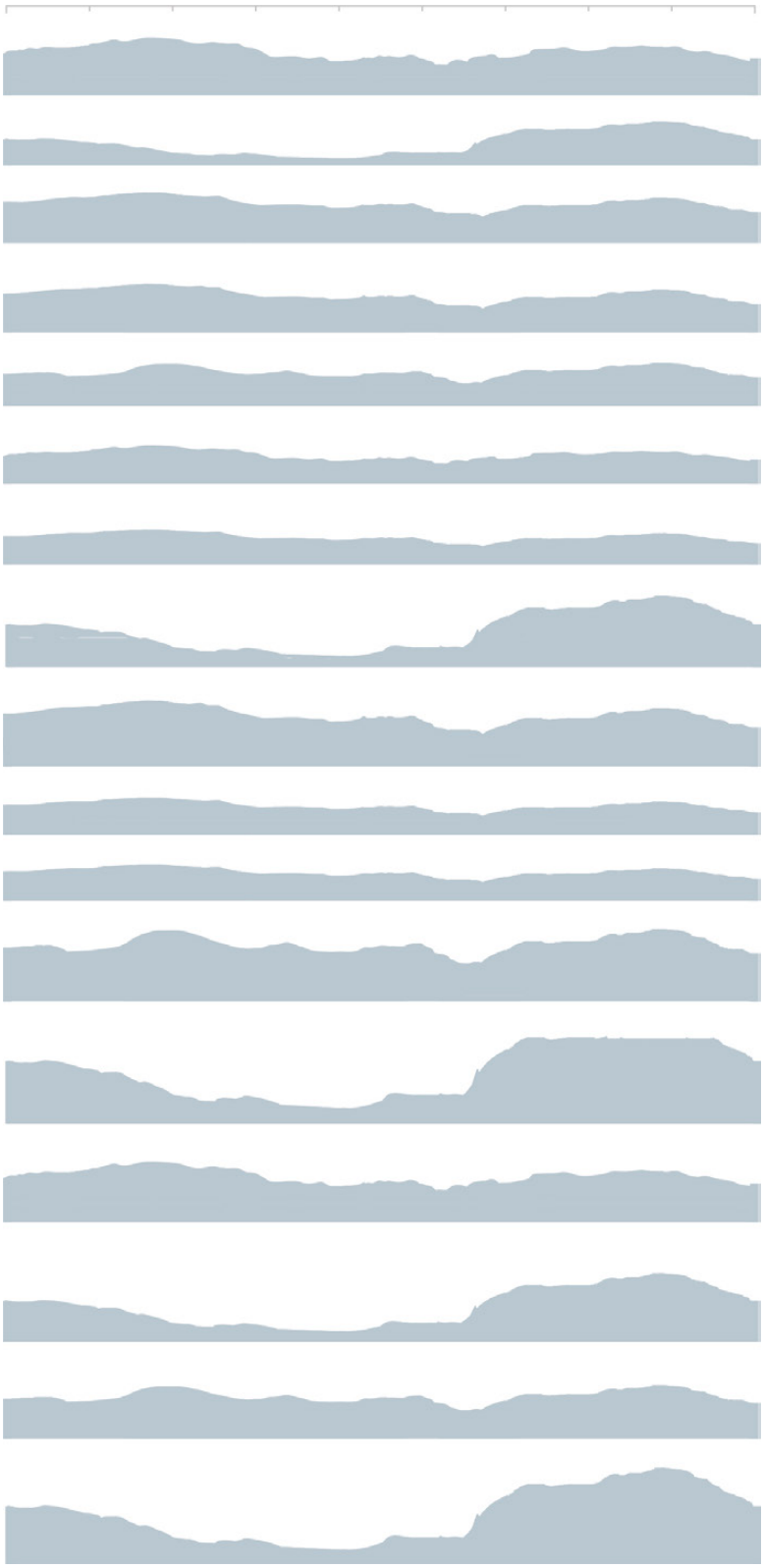
05. Seeing how the site can actaully be used in the design



06. Keeping the textile raw learning materials to be experienced by the users

Fig.41
Process drawings, understanding the wigwam typology to create a bentwood structure using Indigenous building methods.

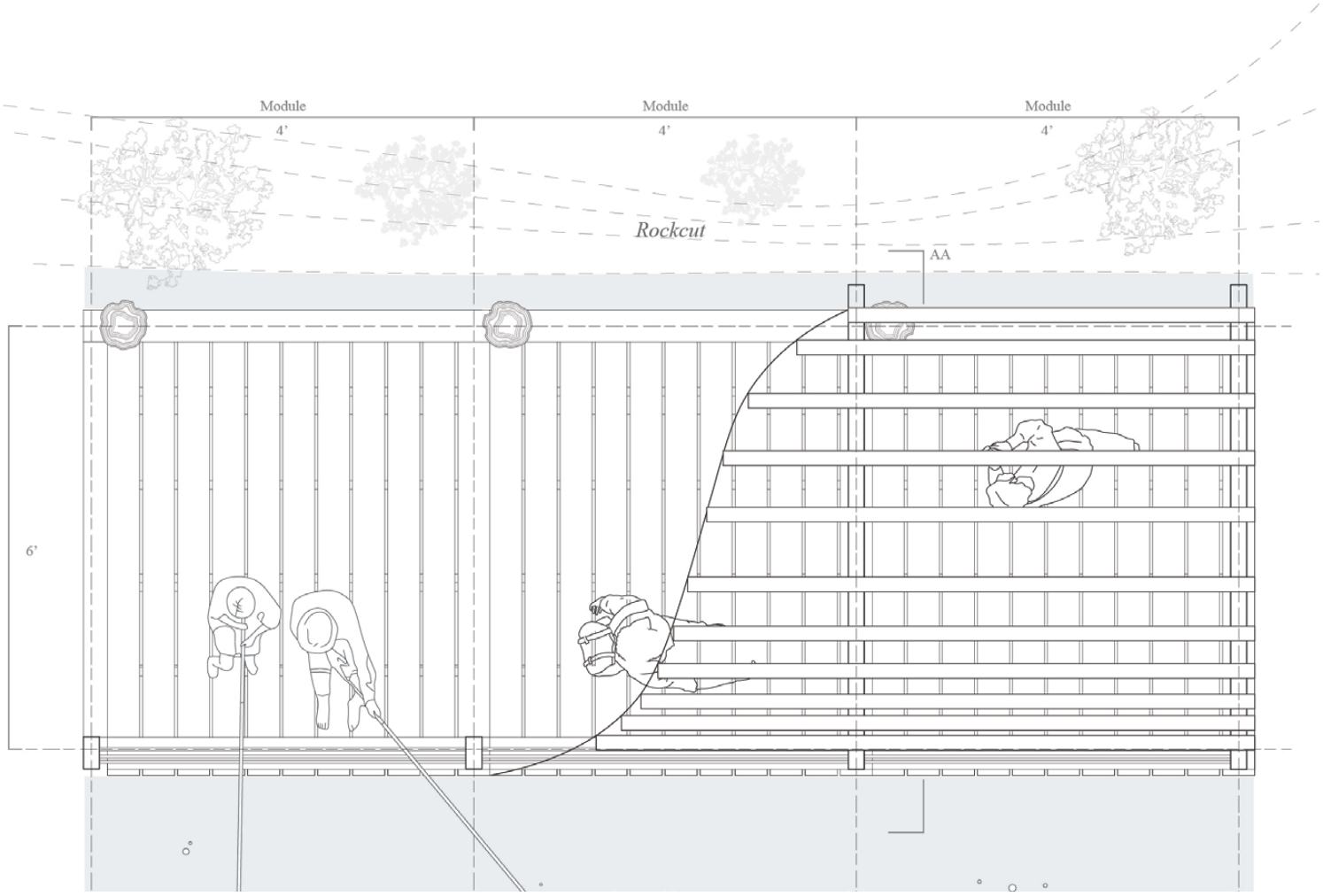
Located near the nature chalet and existing parking, this is where most outdoor classes happen through the city of Sudbury and Conservation Sudbury. While being restricted to one loop for their outdoor courses, the need for a new accessible trail segment was a priority. “We want something that everyone can enjoy, maybe something that does not limit us to the chickadee loop.” [58] While designing this in correlation with Conservation Sudbury, the goal was to include more indigenous traditions within the build. Conversing with a few local elders, having a mix between bentwood and structural wood would be a way to convey traditional building typologies. Conservation Sudbury was enthusiastic about the new design, although some potential cost and construction issues were presented. The design evolved into a series of 4 by 6 modules that could be built in a community workshop setting, where anyone can learn about traditional bentwood methods and standard construction methods. By doing so, the city is not limited to building the boardwalk all at once, and it can be expanded bit by bit to meet budget and volunteer issues. Using bentwood, the overhang is secured by a lashing connection to a tree trunk. This gives people a sense of how natural building elements can be introduced into the design without creating any waste. Due to accessibility issues, people who have limited mobility were subject to only one view of Lake Laurentian. With the addition of the accessible boardwalk, more people can experience the Land, learn about the environment and be subject to a more experiential way of living. In a 2015 study done by Roberta Woodgate, youth talked about conditions contributing to healthy environments and how healthy environments contributed to a strong sense of place. The result is a more energetic and enthusiastic will to learn and be motivated. [59]



The addition of the floating boardwalk will give people with limited mobility a chance to learn about the Land in a safe and accessible manor, inevitably creating a greater sense of health and well-being. This boardwalk also gives the Lake Laurentian Loop secondary access, thus creating a new trail segment for everyone to enjoy and experience. Current site conditions make it impossible for people with limited mobility to access many of the Lake Laurentian Conservation Trails and Lookouts, making it impossible for certain people to experience the views and teachings that the Land can offer.

Fig.42 + 43
(Left)
Cutting sections into various parts of the Land to understand the dynamic nature of the Sudbury landscape.

(Right)
Accessible Boardwalk plan, relating to uses and context.



This design was brought forward thanks to the help from Indigenous scholars and the group at Conservation Sudbury. While having many safety and accessibility issues, this portion of the thesis demanded a solid understanding of the nature of the accessibility issues found within various student groups. As the design evolved, more questions about safety were brought to the surface. After discussing new designs with Conservation Sudbury, the project was finally grounded within the context of the natural environemnt. This being the unequal opportunities for people to experince the same landmass for factors out of individual control.

The accessible boardwalk as it is designed now reflects the unequal experience students and daily hikers face daily. The boardwalk will allow people to interact with water, aquatic creatures, adjacent rock cuts, and the Lake Laurentian flora and fauna, working towards a greater sense of place while increasing health and well-being.

Fig.44 + 45
(Right) Sectional perspective of the accessible boardwalk showing the bentwood structure, lashing details and dock floats. The atmosphere demonstrates the multidisciplinary interactions people have with the surrounding Land.

(Left) Atmospheric vignette showing the immediate body of water, materiality and further uses.

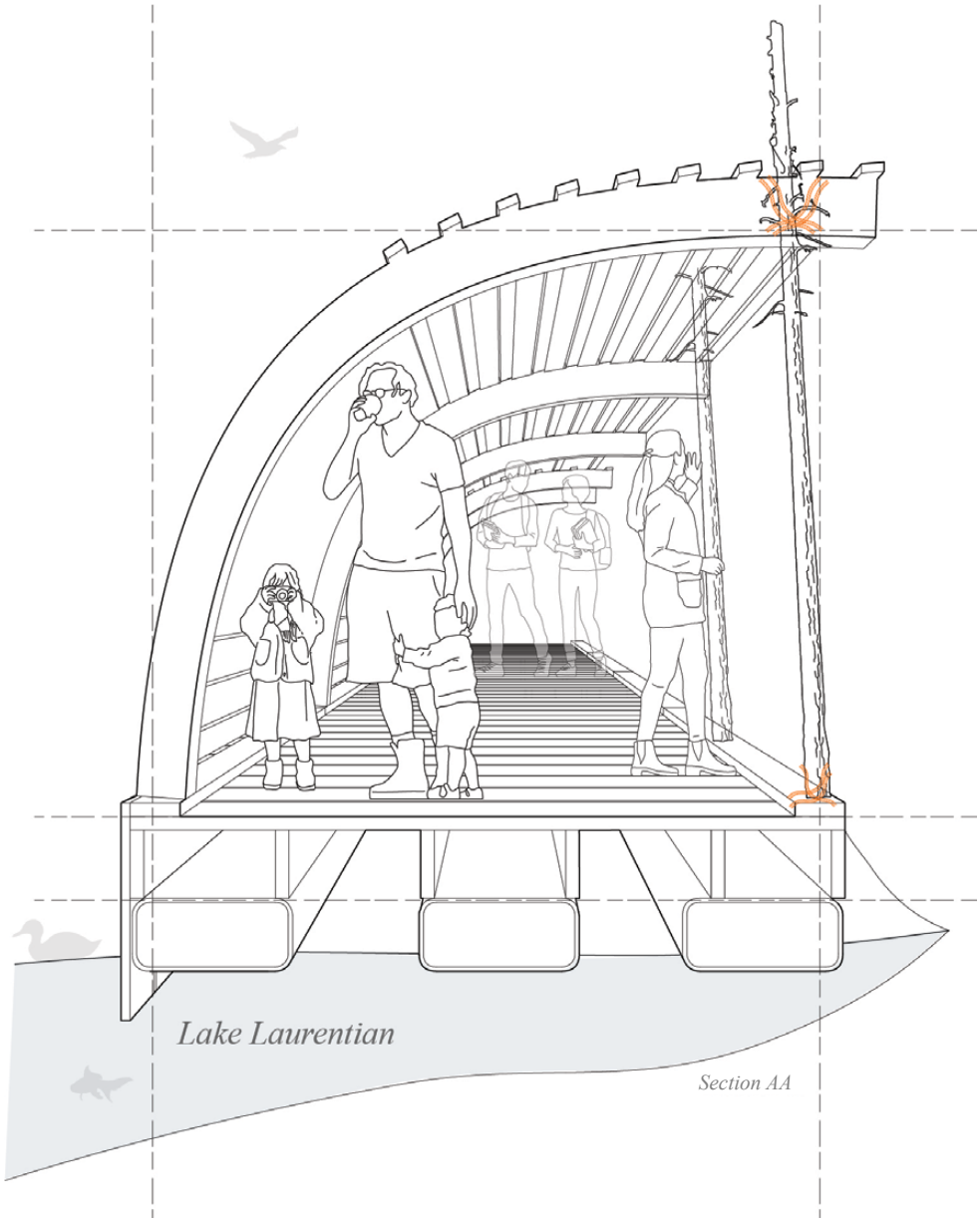
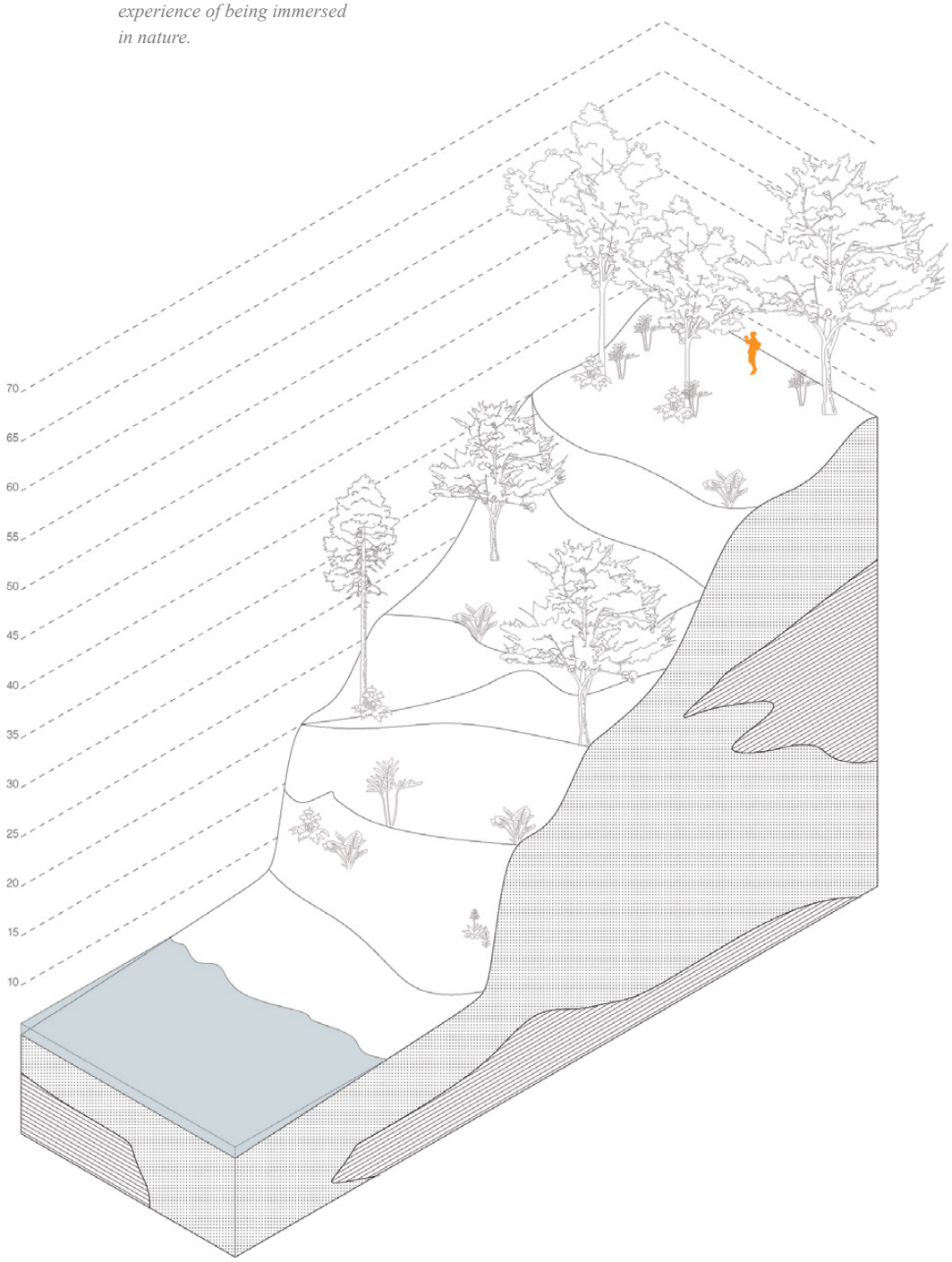
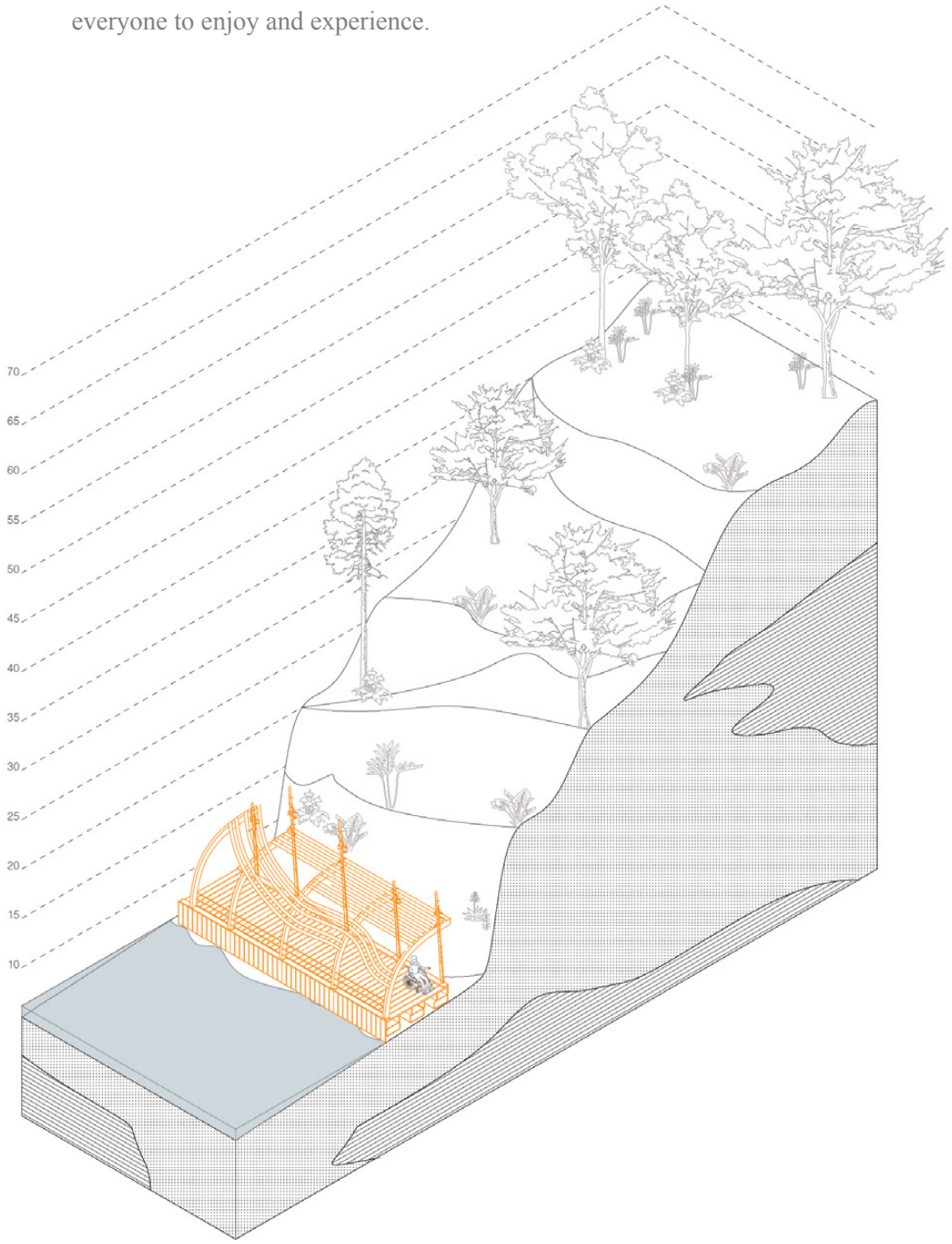

Lake Laurentian
Section AA

Fig.46 + 47
(Left)Cutting through the site shows how people can reach the peak via elevated trail segments.

(Right) With the addition of the Accessible Boardwalk, all can understand the experience of being immersed in nature.

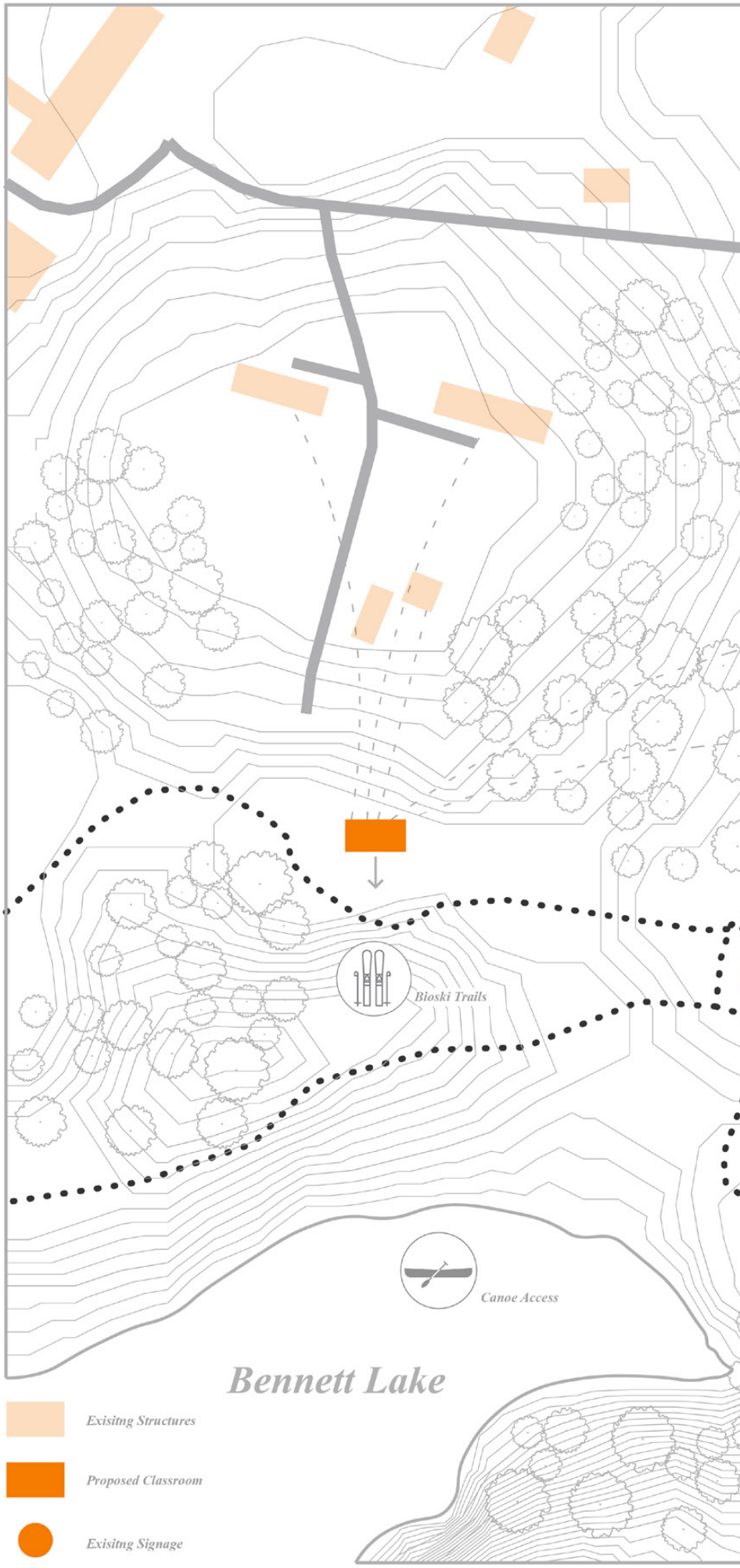


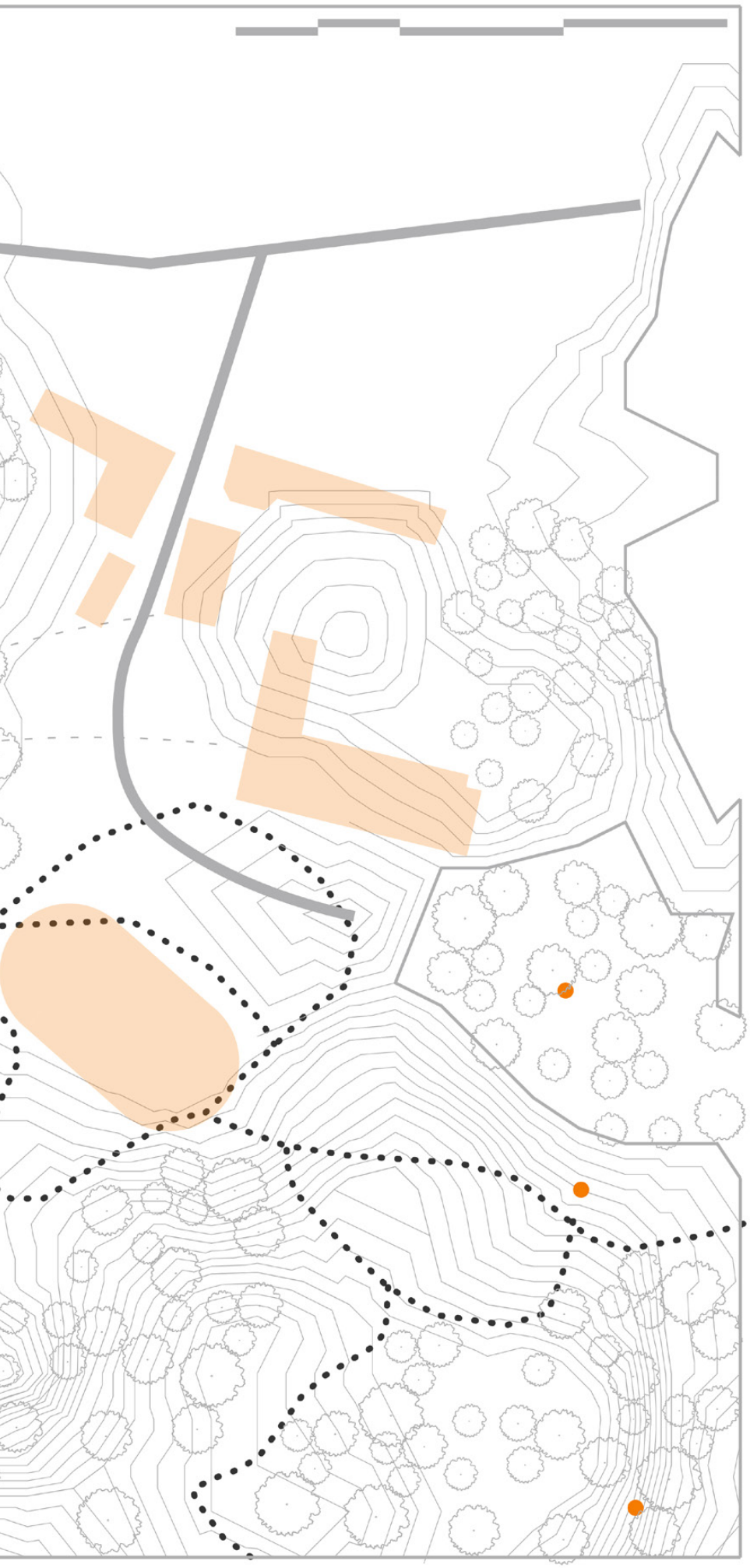
The addition of the floating boardwalk will give people with limited mobility a chance to learn about the Land in a safe and accessible manner, inevitably creating a greater sense of health and well-being. This boardwalk also gives the Lake Laurentian Loop secondary access, thus creating a new trail segment for everyone to enjoy and experience.

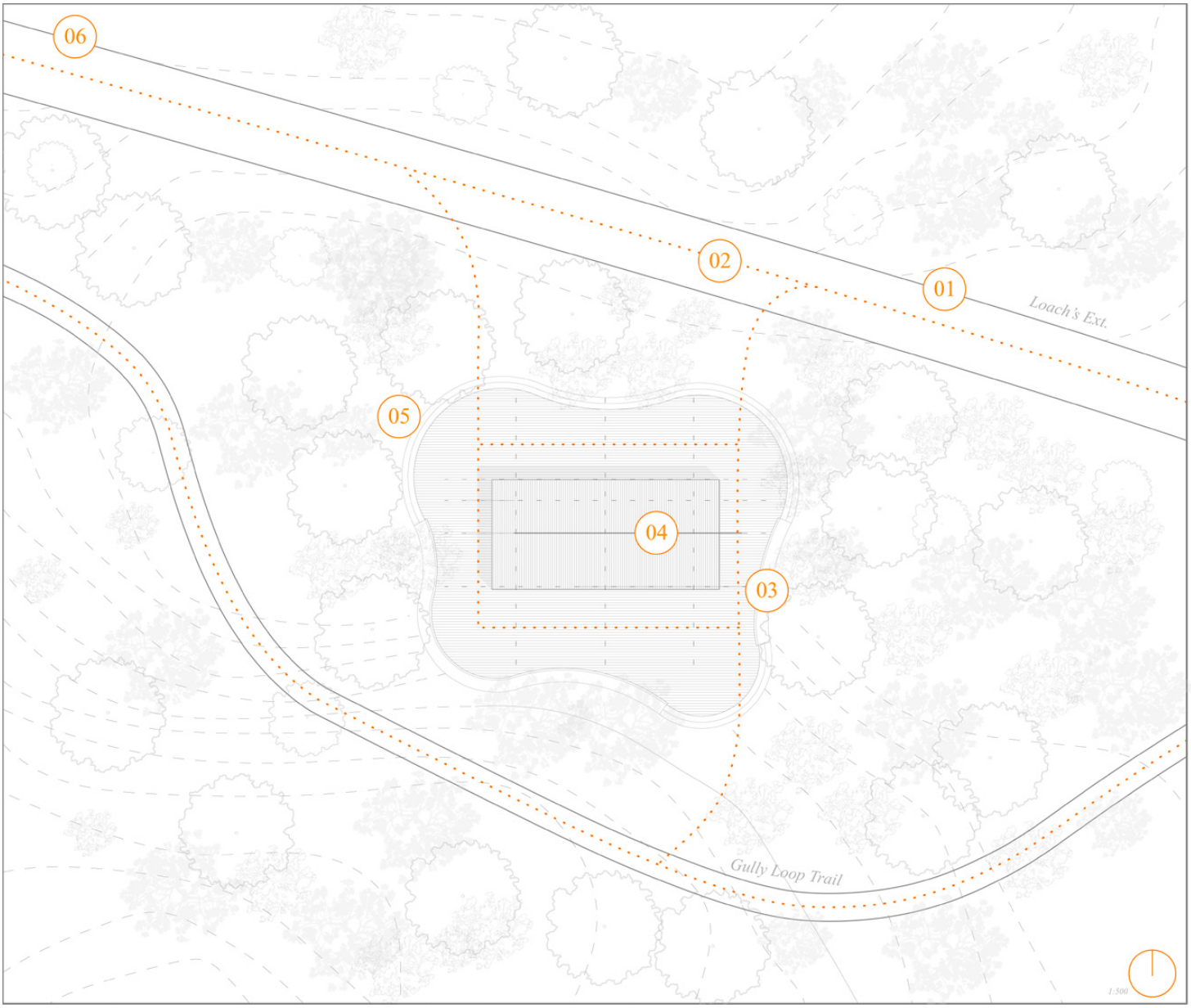


5.3. The Learning and Teaching Space

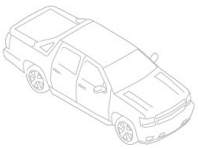
Fig.48
Context site plan analyzing the direct relationships to existing buildings on the Laurentian University campus. This was in direct anticipation that everyone could access The Teaching Space in a short distance.







01 Access for vehicles for construction and emergency purposes



02 Loach's Exit is a trail that is considered accessible, with hard-packed dirt

03 Direct access for bioski memebrs to hop off the trail and warm up

04 Located between two trails, the structure does not propose any disruption of trail segments

05 Two way access from both the Laurentian main campus, and Loach's Road, which will increase the amount of potential interactions

06 Opportunity to rent the space to anyone who wants to have an event space located both near commercial and educational infrastructure while being in nature. Opportunity for secondary income and a self-sustaining building

The Learning and Teaching Space

Fig.49
The Learning and Teaching space adjacent to existing trail segments situates it near a wide range of users (bioski trails and walking paths).

Located on the Laurentian University campus, this was the most challenging structure to place because of its size. The relationship to existing networks was analyzed, trying to place the teaching space near programs like the Physical Activity Centre, the Health Sciences and Education Centre, student residences, and existing parking.

Working with professors at Laurentian University, it was determined this would be the best and most feasible location for the building. Located off of Loach's Road allows vehicle access for material transportation or emergencies. Loach's Road is also reasonably accessible for people with walking impairments while giving access from both main campus and Loach's Road. The building sits between the two main trails, thus making it minimally invasive without disrupting the existing trail segments.

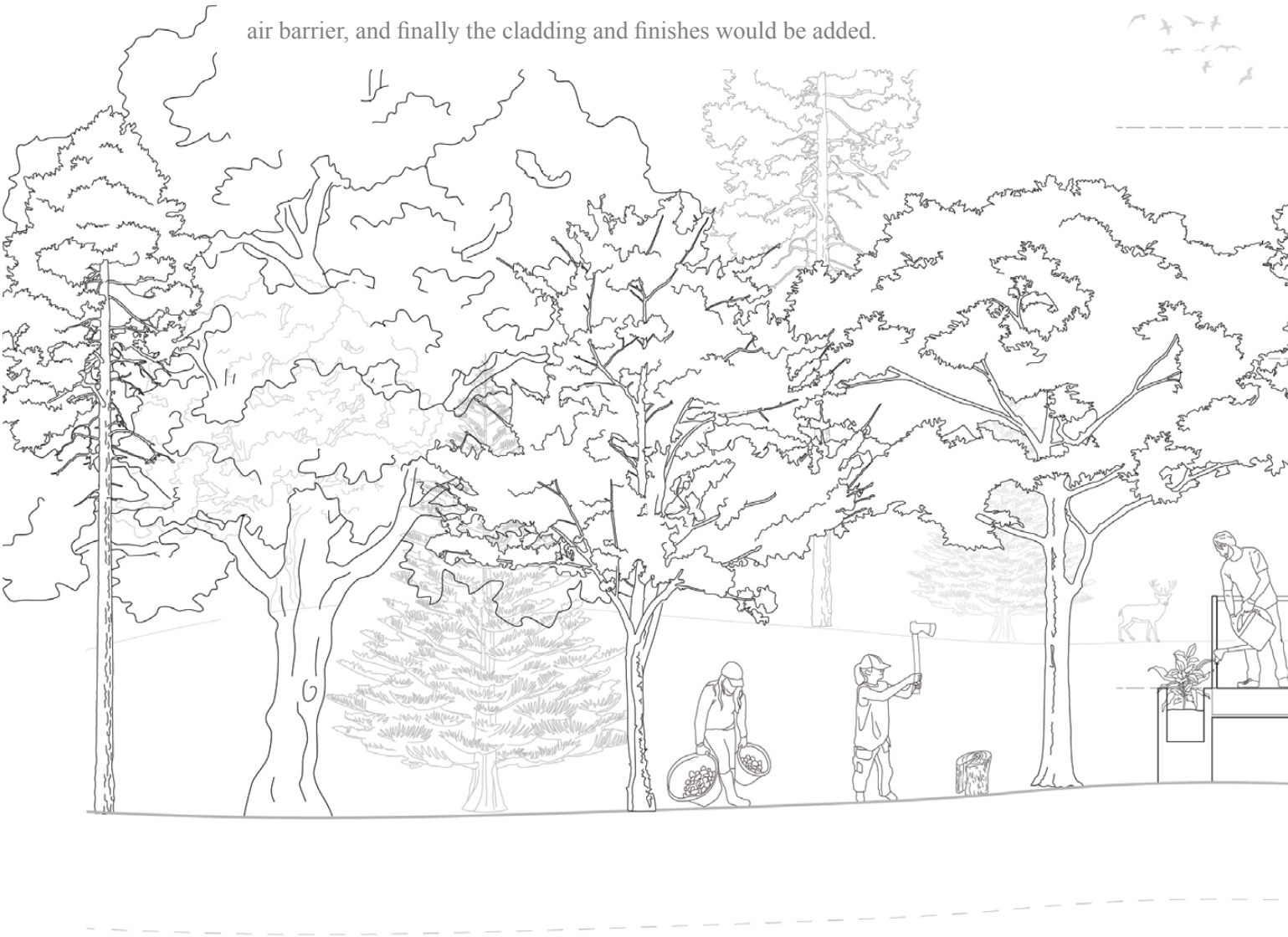
Once inside, the design directs the users to appreciate the relationship to the outdoors with the western glazing and the southern folding doors, while the overhanging roof on the eastern end creates a microclimate to shelter one from the sun, rain, or other weather conditions. The surrounding deck was purposely built to extend working areas to develop a programmed space where learning or hands-on maintenance can occur. There is a copious amount of room to work on canoe repair or circulate while still having generous space for exterior seating.

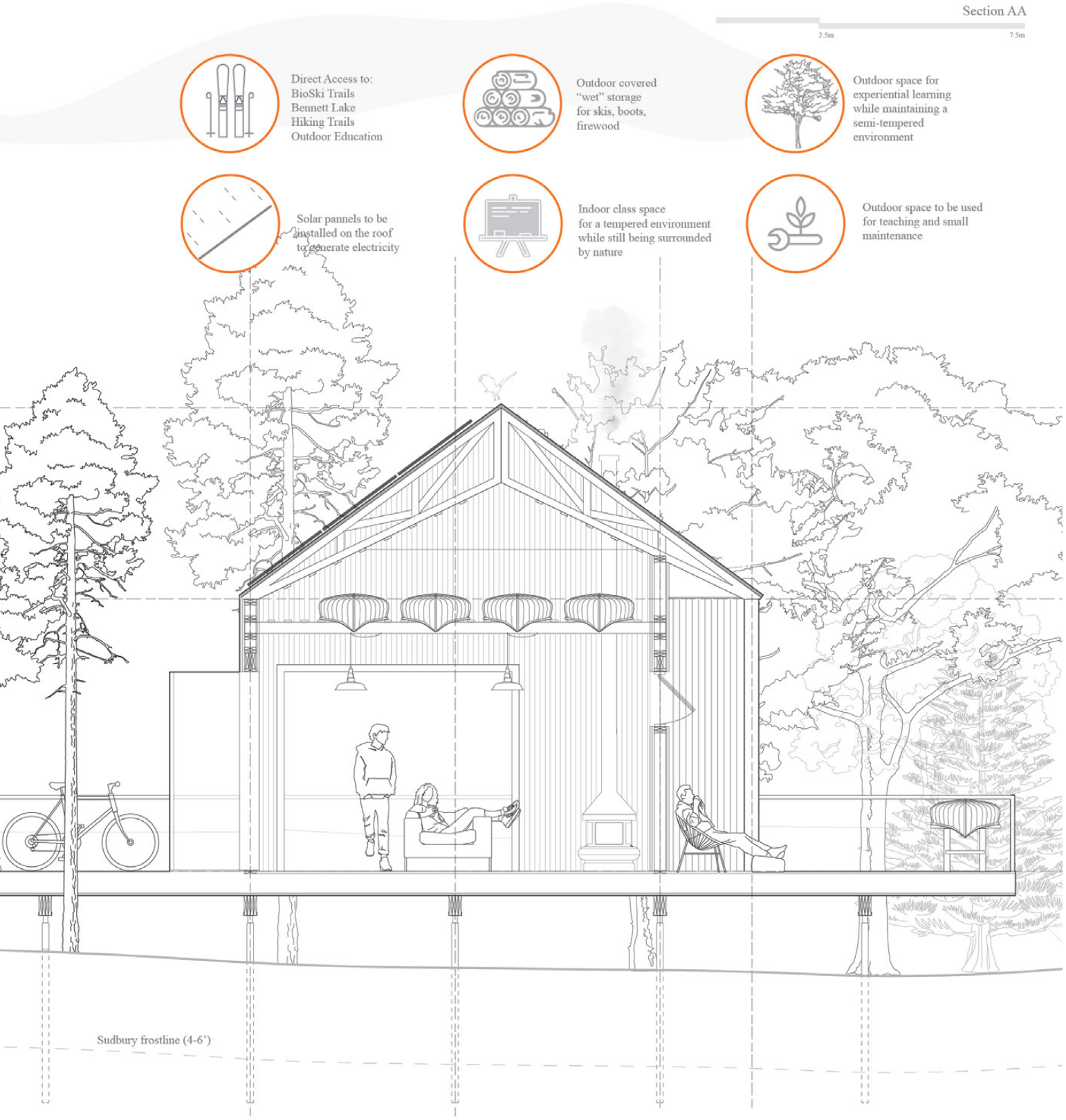
The north wall doesn't extend to the roofline; an overhang was created to have a semi-sheltered space for seating, equipment, or firewood storage. The relationship to the surrounding environment was particularly important to disrupt the land as little as possible and harmonize with the existing fauna and flora.

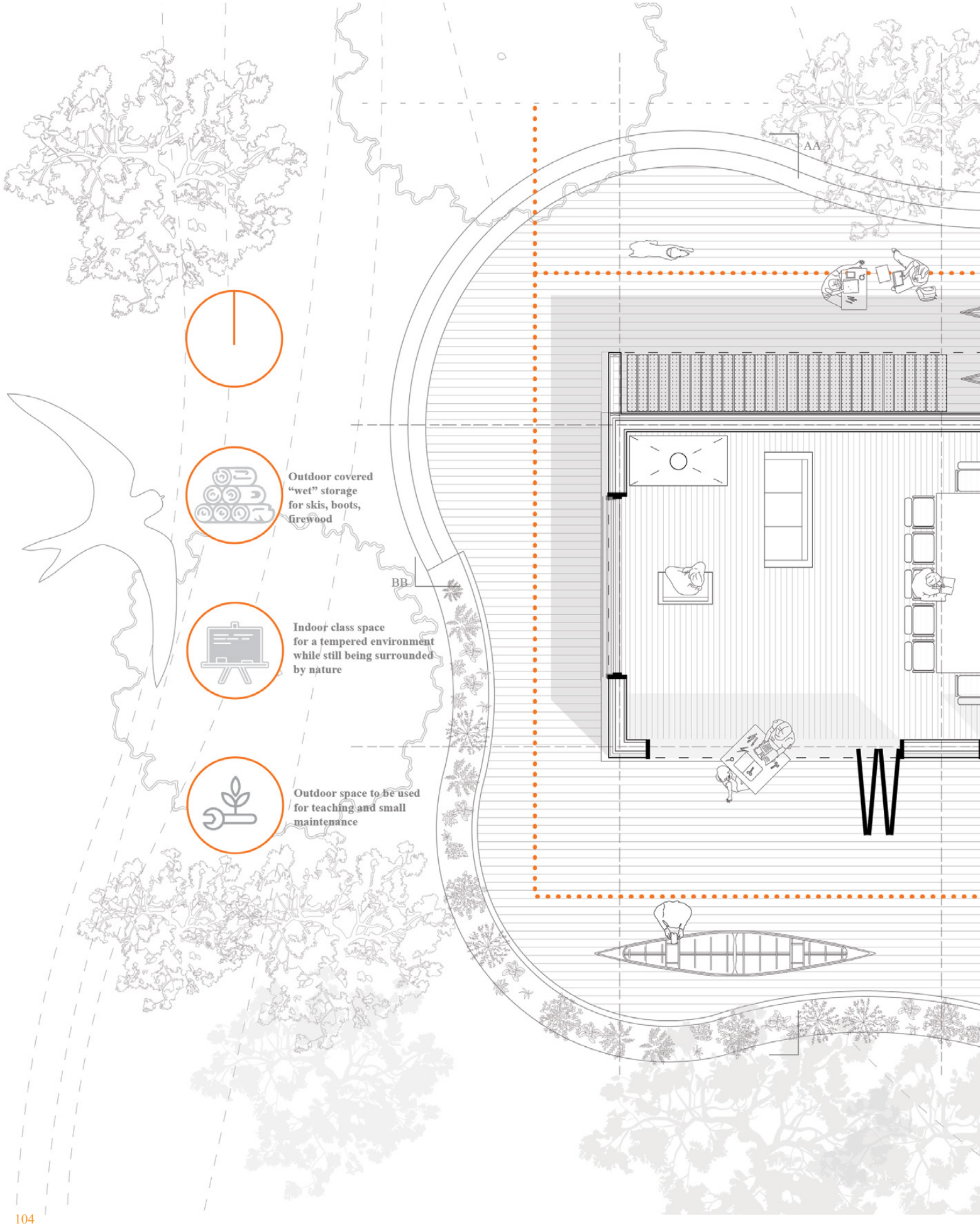
The Learning and Teaching space was purposely designed to be quickly built by community members and volunteers.

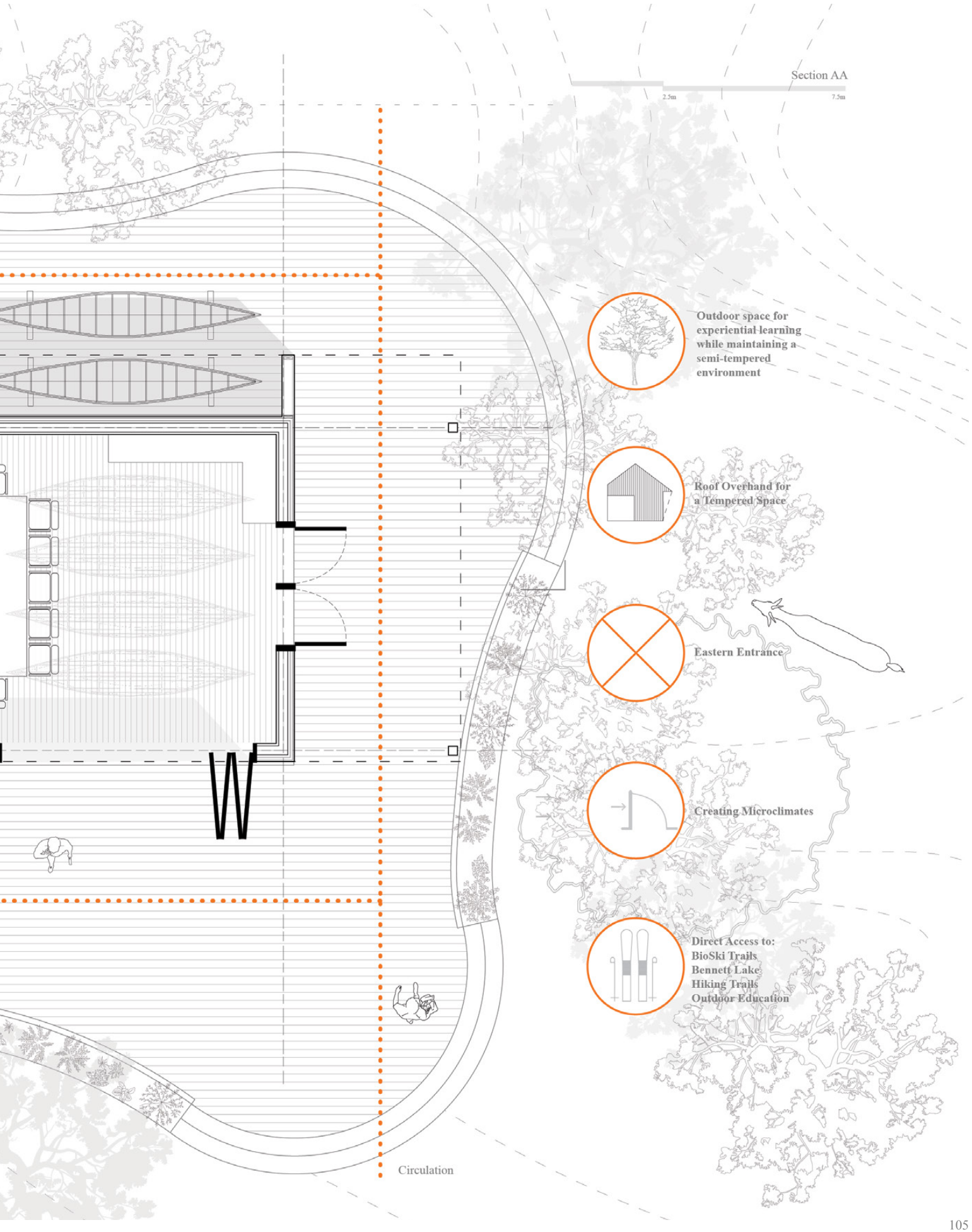
The piles would go in first to prepare the structure, the floor beams would then be brought in and attached. Then the floor joists that span the entirety of the building and the proposed deck area followed by the subfloor. The decking is added to create a flat surface to build the walls and the typical 2”x 6” stick framed walls are built laid down, then erected into place one by one. The next step would be sheathing and an air barrier, and finally the cladding and finishes would be added.

Fig.50
The Learning and Teaching Space is somewhere people can go to learn, enjoy the outdoors, and build a strong sense of place.




Section AA
2.5m
7.5m
Direct Access to:
BioSki Trails
Bennett Lake
Hiking Trails
Outdoor Education
Outdoor covered
"wet" storage
for skis, boots,
firewood
Outdoor space for
experiential learning
while maintaining a
semi-tempered
environment
Solar pannels to be
installed on the roof
to generate electricity
Indoor class space
for a tempered environment
while still being surrounded
by nature
Outdoor space to be used
for teaching and small
maintenance
Sudbury frostline (4-6')


AA
BB
Outdoor covered "wet" storage for skis, boots, firewood
Indoor class space for a tempered environment while still being surrounded by nature
Outdoor space to be used for teaching and small maintenance


Section AA
2.5m
7.5m
Outdoor space for experiential learning while maintaining a semi-tempered environment
Roof Overhand for a Tempered Space
Eastern Entrance
Creating Microclimates
Direct Access to:
BioSki Trails
Bennett Lake
Hiking Trails
Outdoor Education
Circulation

The symbiotic relationship created through indoor-outdoor relations helps the users connect to the natural aspects of the site without leaving the teaching space. While discussing possible layouts with professors at Laurentian University, a central problem with their current classroom is the complete disconnect from the natural landscape. While having to teach in a typical classroom setting, then leave to put into practice the teachings, there is a missing component that could only be addressed through an outdoor teaching space.

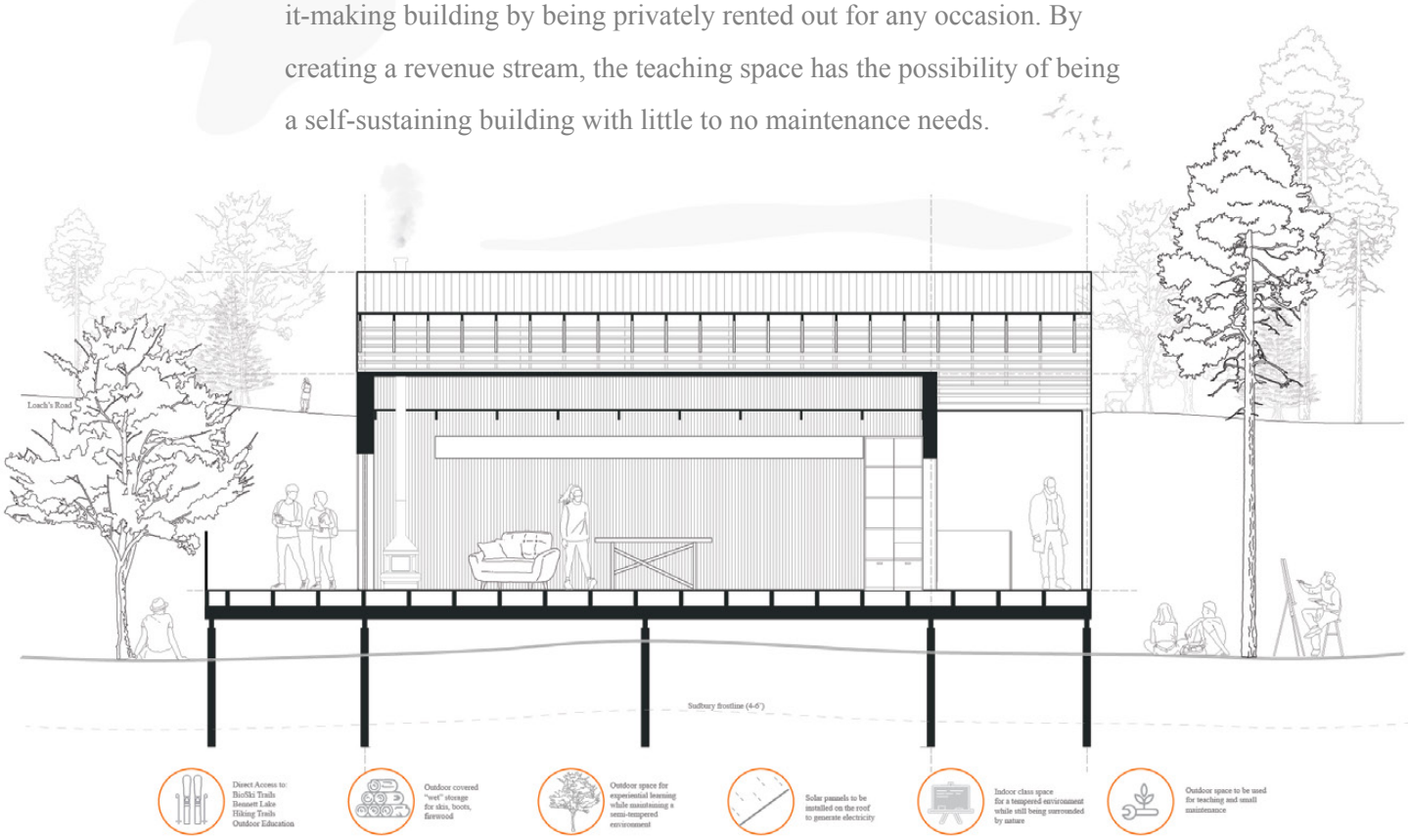
The program needed to reflect the needs of Laurentian's Adveture Leadership (ADVL) curriculum. First, a space where lectures could occur while fully or partially tempered from exterior climates. Next is an area for storage, including canoes, skis, boots, tents and other outdoor sports equipment. The space needed to be flexible enough to accommodate various people and programs.[60] For example, the teaching space could be used by the ADVL students one day and be entirely adaptable for Biology students the next. This space reflects the pedagogy practiced by the Indigenous People living in Canada today. By working with various groups, including local knowledge keepers and Elders, the design reflected the Land while serving the general public as a tempered teaching space.

Being one with the Land was especially important for this intervention. Being surrounded by vernacular flora and fauna, the teaching space is an elegantly placed structure that meanders between existing birch trees, respecting the adjacent environment. Sitting on raised piles, the building allows fresh air to circulate under the structure, protection from flooding, and building without significant harm to the landscape.

Fig.52
Relationships between Land and building were explored by building light on the Land while creating adjacencies to the existing fauna.

Unlike a typical classroom, this learning and teaching space is a physical representation of Land-based learning and experiential education. By utilizing principles like reflective observation through the Grandfather Teachings, abstract conceptualization while discussing designs with community members, active experimentation while visiting the site countless times, and creating a concrete experience through final drawings, this structure will hopefully be a foundation for learning about nature.

Creating a sense of place is often a challenging problem while designing a building, possibly because the designer is often disconnected from the Land. This experience enabled the sense of space while engaging community members to enhance the project and root within the Land. By doing so, the program is more flexible and adaptable to be used by various stakeholders. While being just off of a primary path (Loach's Road), the teaching space also has the potential to be a profit-making building by being privately rented out for any occasion. By creating a revenue stream, the teaching space has the possibility of being a self-sustaining building with little to no maintenance needs.




Gully Loop Trail

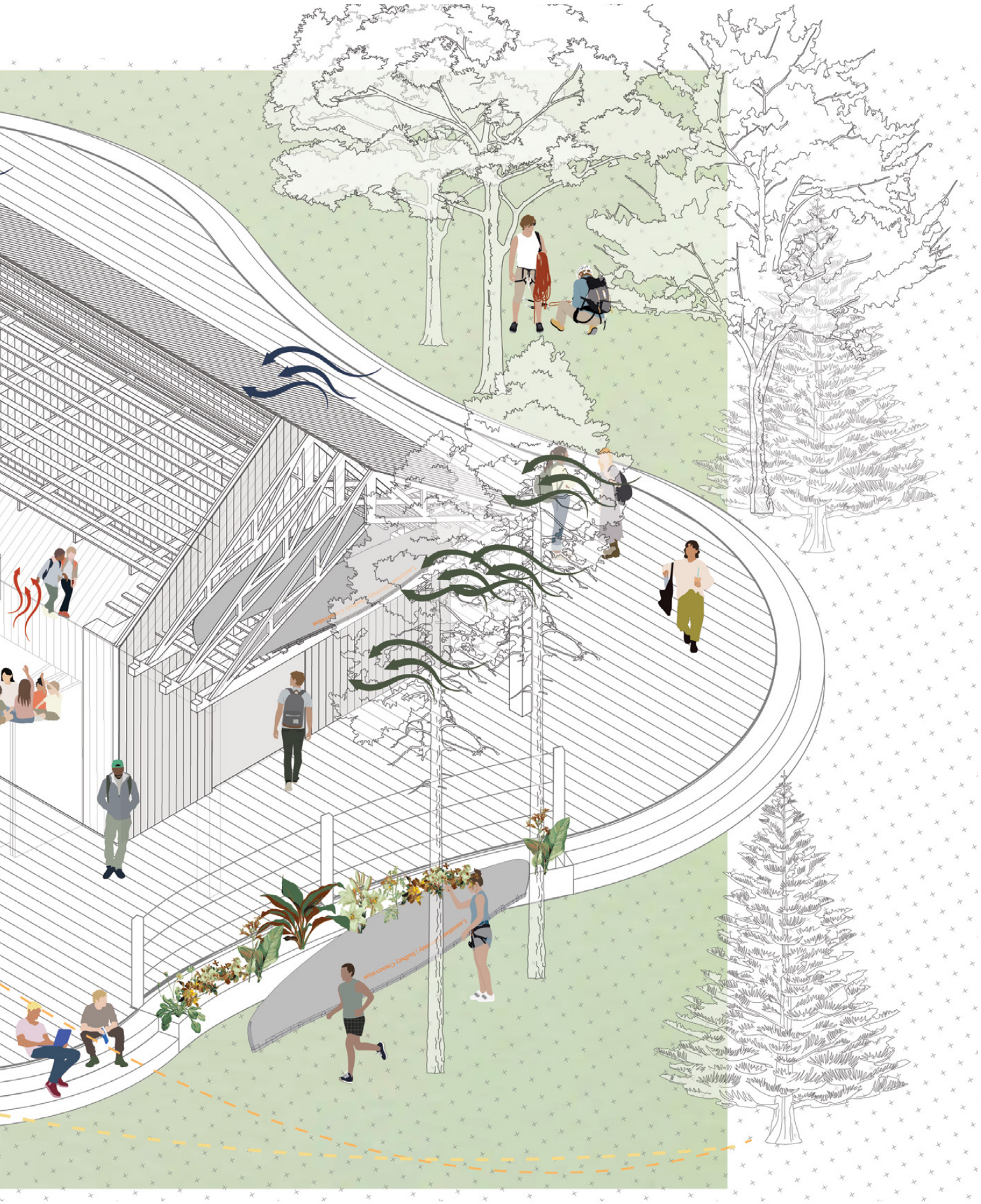
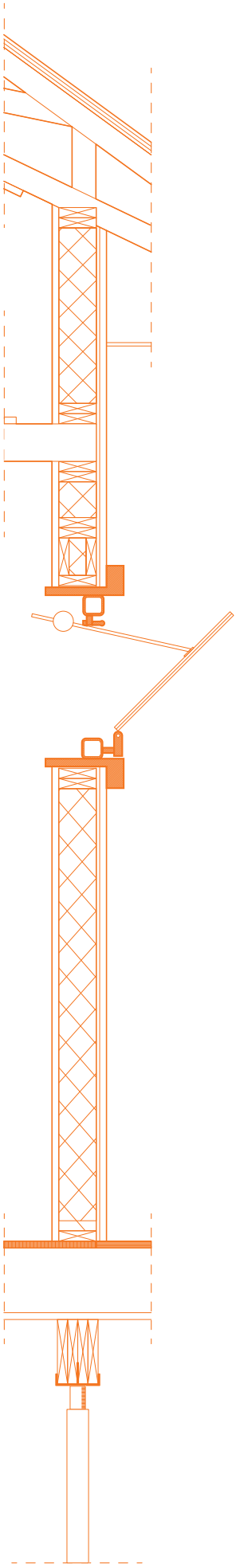
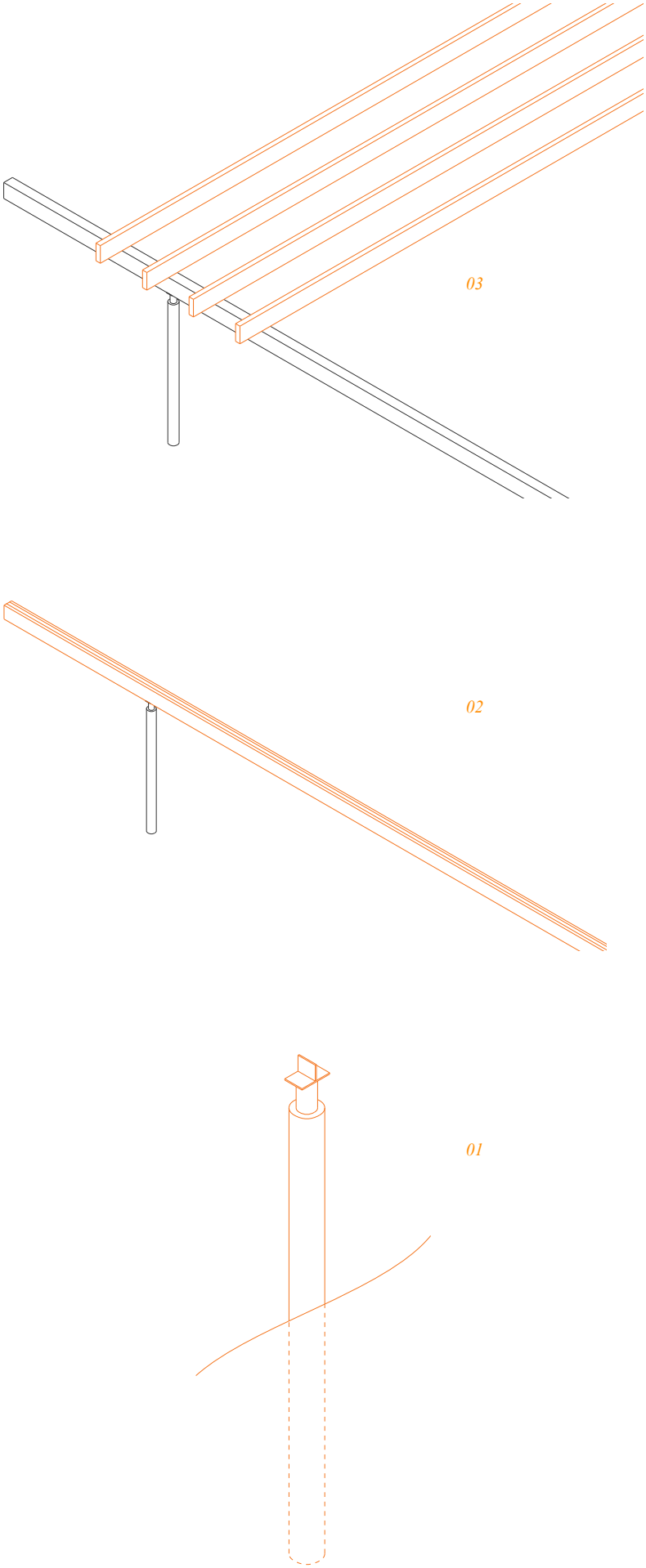


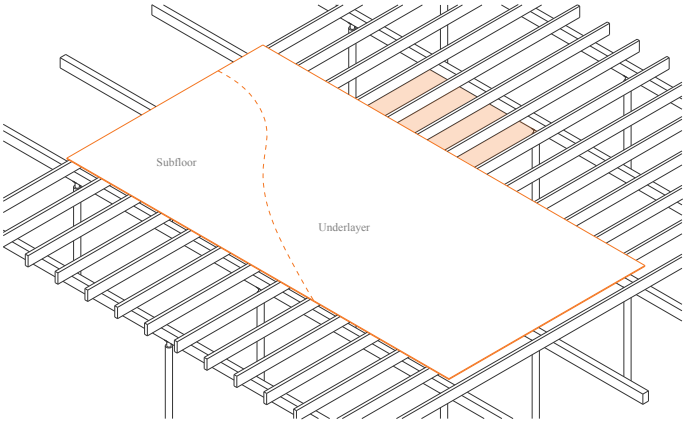
Fig. 54 + 55
Building process diagram.





The floor joists will then be placed on the beams, creating a semi- rigid structure that can be walked on (carefully).

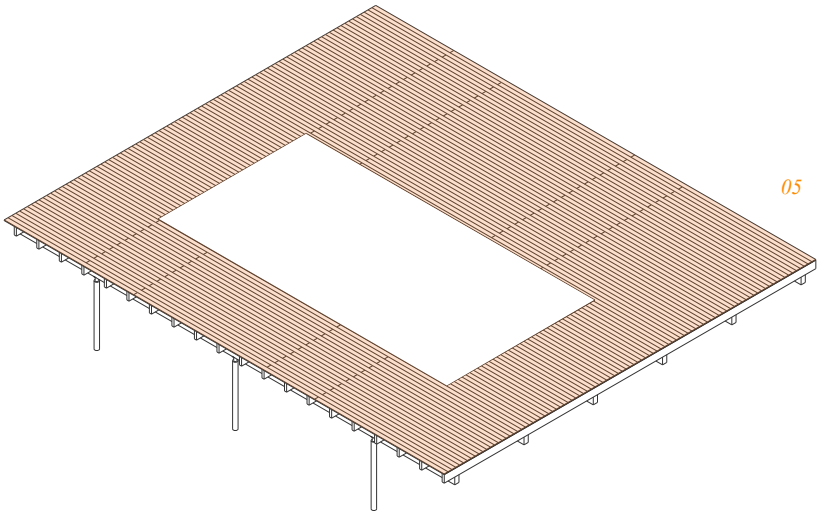
After ensuring everything is square and level, the subflooring can be brought to site.



04

Insualtion is placed between the floor joists. The subflooring is a structure attached to the floor joists which provides support for the finish (surface) flooring.
The subfloor is typically OSB boards with an underlayment material over it for protective barrier and is meant to absorb any roughness or imperfections of the subfloor

After the piles are installed and secured, the floor beams will be placed on the plates. The beams will be pre-notched to perfectly sit on the t-plate.



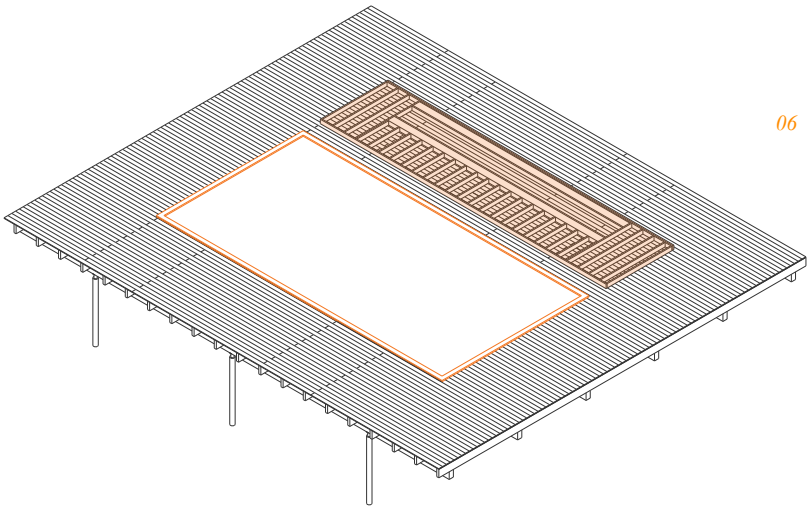
05

The next step is to install the decking. This will ensure a stable platform and a safe work area to construct the walls.

Working on a flat surface, like a deck, is necassary to build straight, accurate wall assemblies.

Sitting between two trail segments, one being the Bioski trail, and the bigger being Loach's Road.

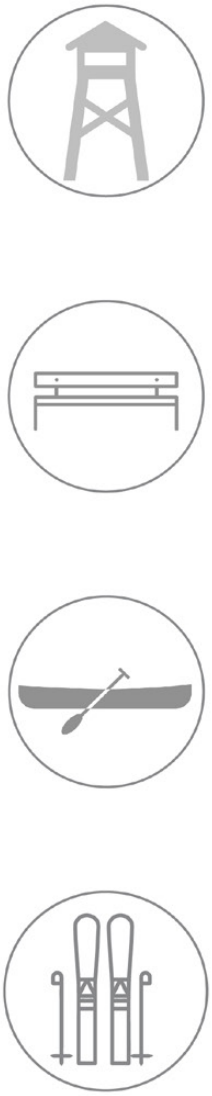
The firsts step of construction would be to prep the ground and install the helical piles through to the bedrok or past the frostline.



06

The wall assembly is a typical 2"x 6" stick frame. The wall will sit on a base-plate, to optimize the structure in case of water penetration. The window openings should be specified to match OBC requirements. Lastly, the sheathing, air barriers and cladding will be installed.

5.4. The Lookout Tower



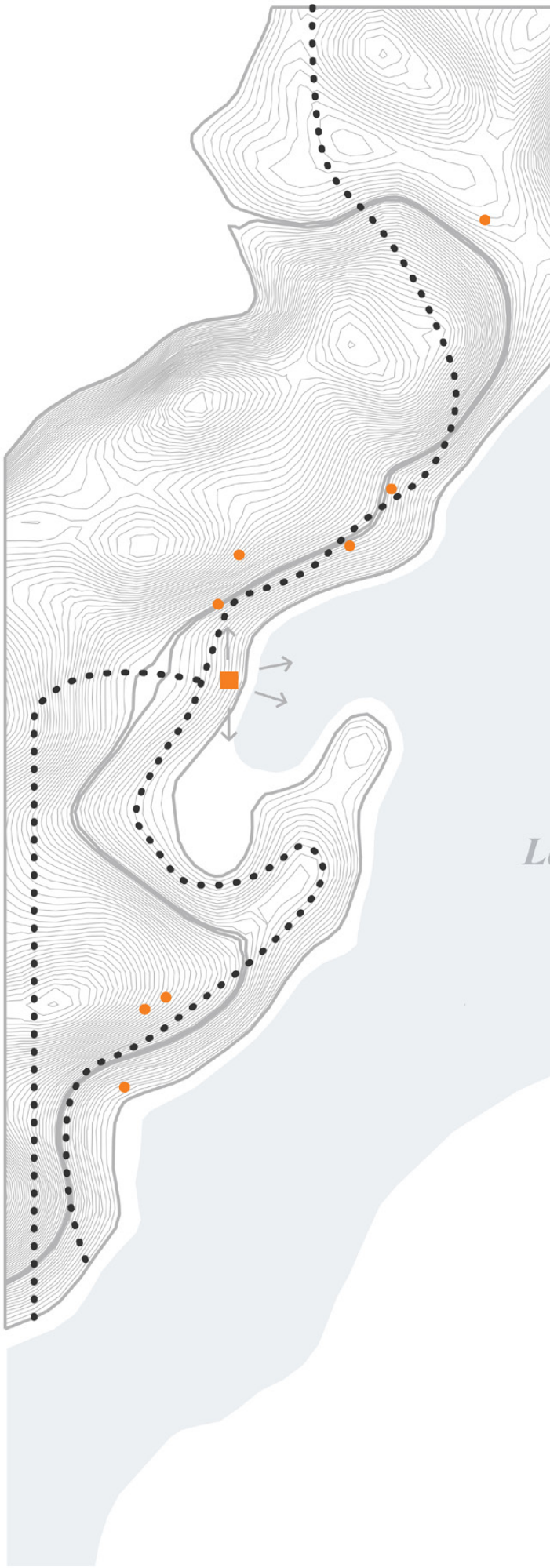
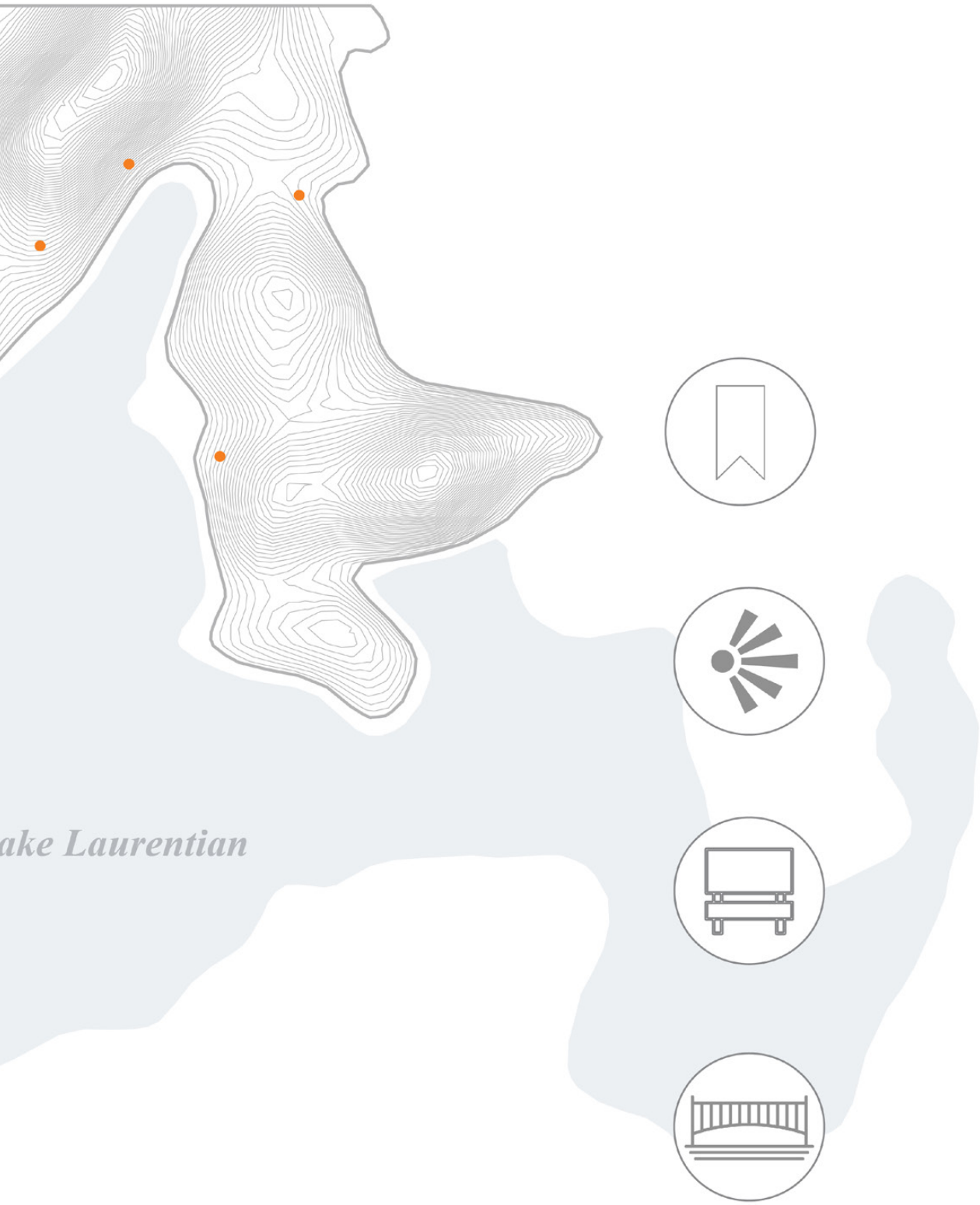
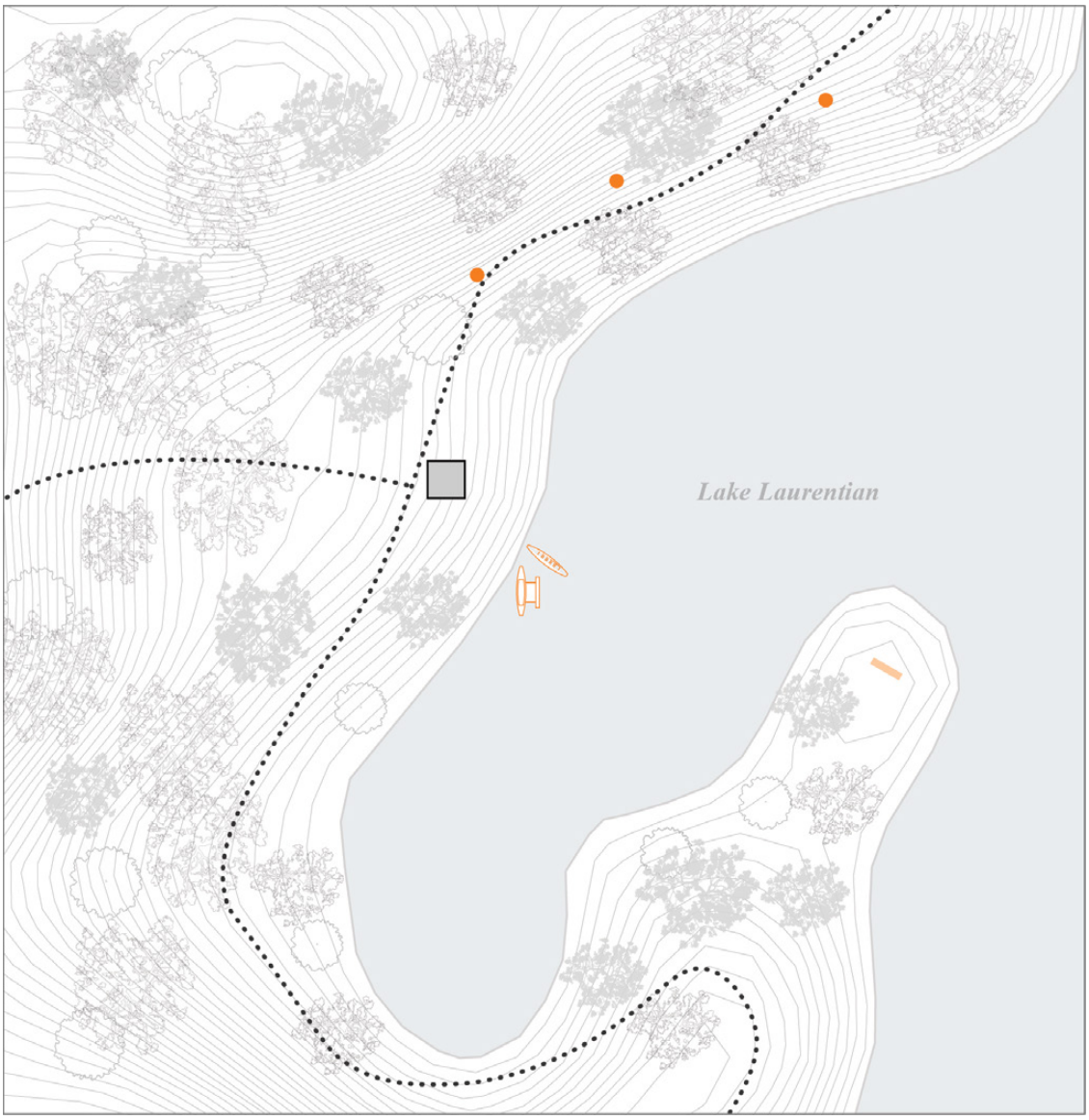


Fig.56
Context map analyzing the connections between scattered peninsulas, existing infrastructure and trail segments.


ake Laurentian


Lake Laurentian

The Lookout Tower

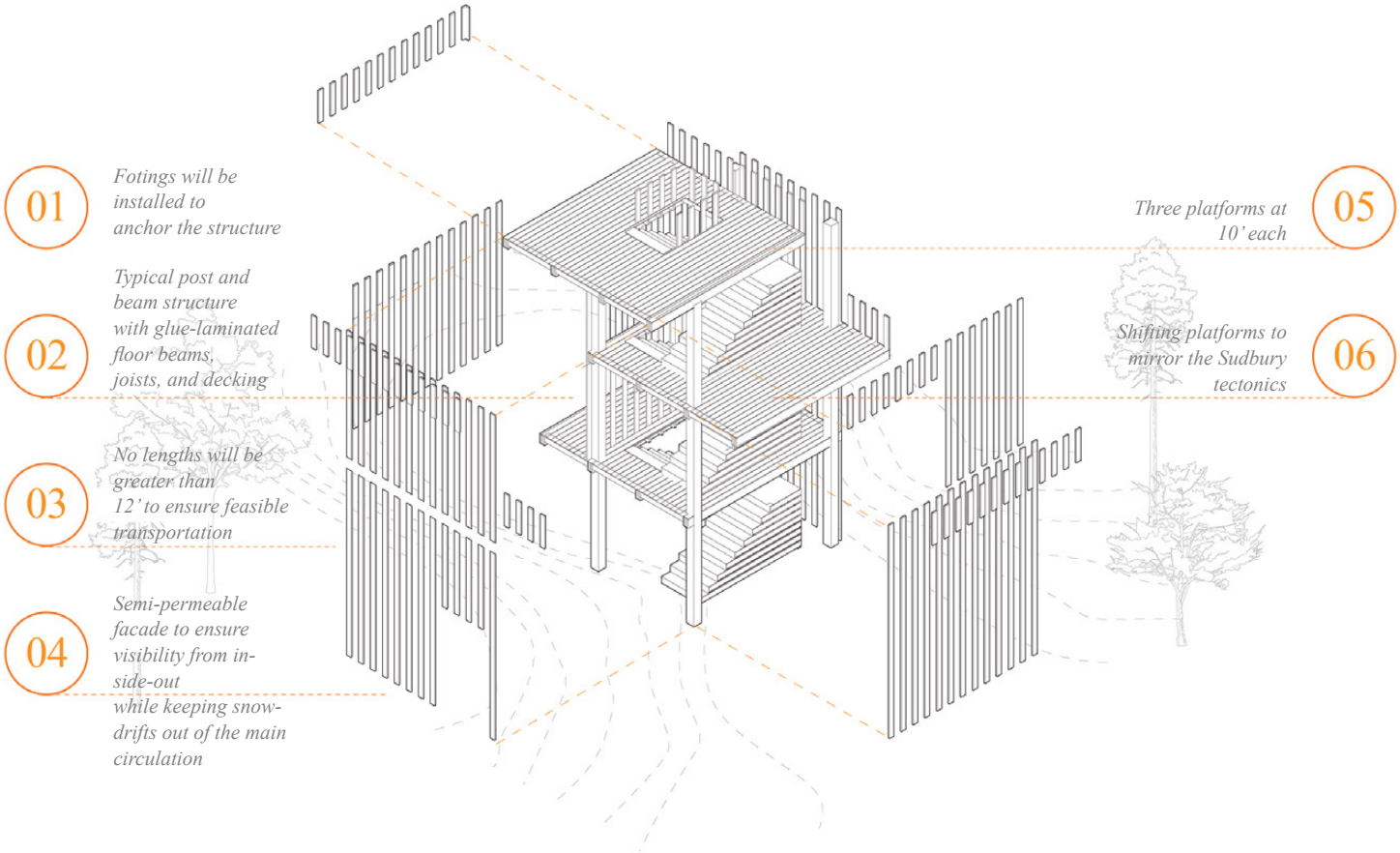
Fig.57
The site plan shows the immediate context, tree lines and proximity to the water's edge.

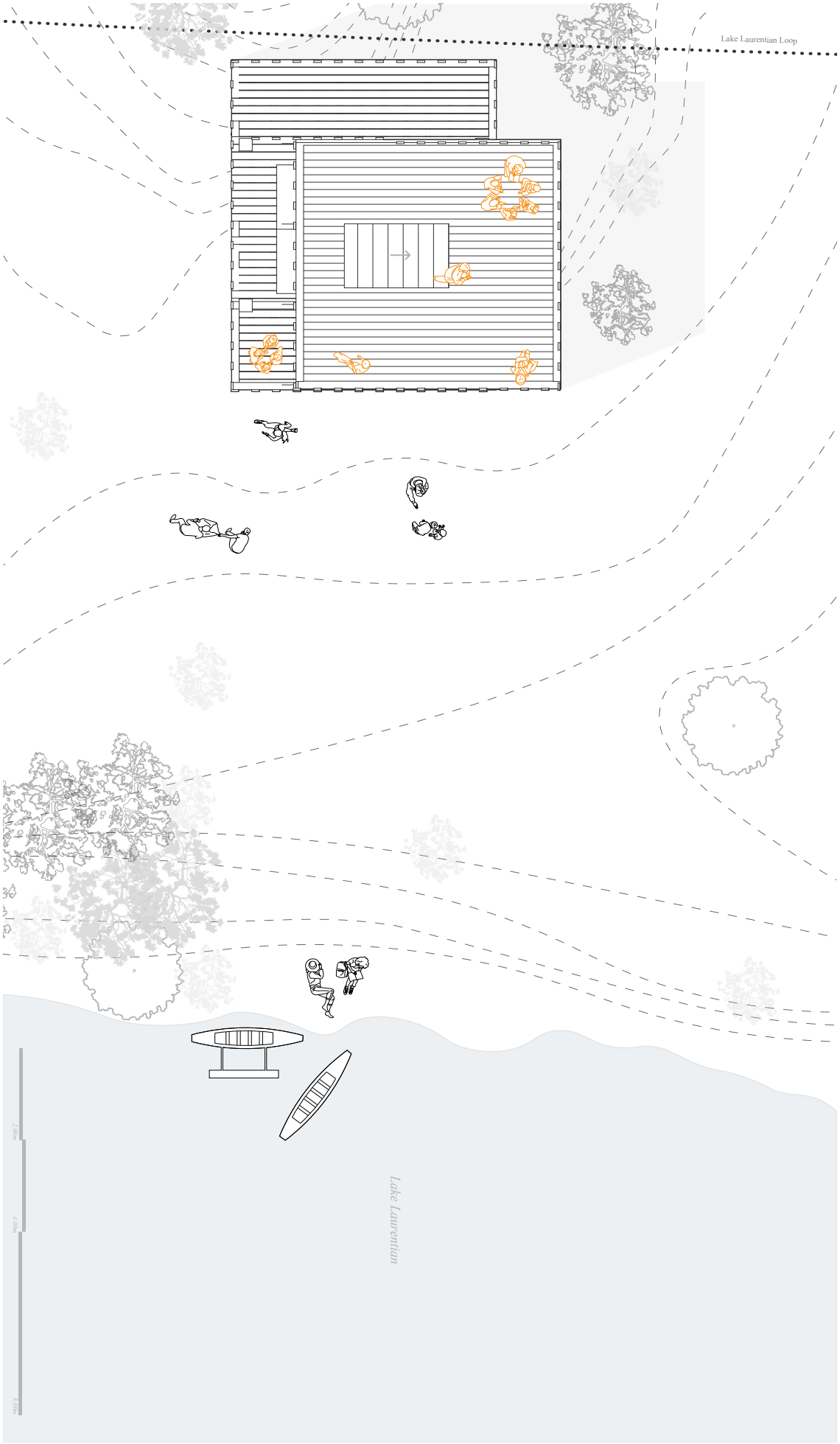
Adjacent to two existing trails, the Lake Laurentian Loop and an unmarked trail connected to Sophie's Loop, the building was placed to accommodate the busy Ida Street entrance which is located south of the tower. The tower needed to reflect the natural landscape of the Land, as well as the newly built infrastructure located around Sudbury. Using organic and recycled materials, the tower will symbolize how the land was once used and how it is now being overwhelmed with pollutants and urbanization. Considering the location of this intervention is not accessible by truck, the materials would have to be transported through boats, or snowmobiles during the winter months.[61] It was designed in a way that no pieces of wood are longer than 12 feet for the feasibility of transportation. In figure 59, we can see the sequence of construction and imagine how the construction process would unfold. The Tower would be a standard post and beam structure, with decking and 2"x 6" cladding. While discussing the design with Conservation Sudbury, it was decided not to have the structure completely enclosed, while letting natural light within the structure and keeping large amounts of snowdrifts outside.

Having three shifted platforms, the goal is to climb the tower as a hierarchy of what the Land used to be. While going up, one sees nothing but lakes, trees, and rock cuts, but once at the top platform, the view is directed towards the superstacks. A way of making people pause in time, and reflect on the state of the city. Starting off simple, the goal was to use and reflect the natural aspects of the site. Mirroring the height of surrounding trees and creating various platforms, the shifted levels come from simulating the complex tectonic region of Sudbury. From above, it is important to see the significance that the conservation Land has on the City of Sudbury. It helps with soil remediation, water management, wildlife diversity and microclimate temperatures.

Fig.58+ 59
(Bottom) Exploded isometric view of the Lookout Tower, showing glue-laminated beams, circulation and shifting platforms.

(Right) The adaptability of the Tower is rooted within its immediate context to Lake Laurentian and the adjacent Lake Laurentian Loop Trail. The Tower can be a destination point for various people enjoying the Conservation Area.




Lake Laurentian Loop
Lake Laurentian
0.000m
1.000m
2.000m

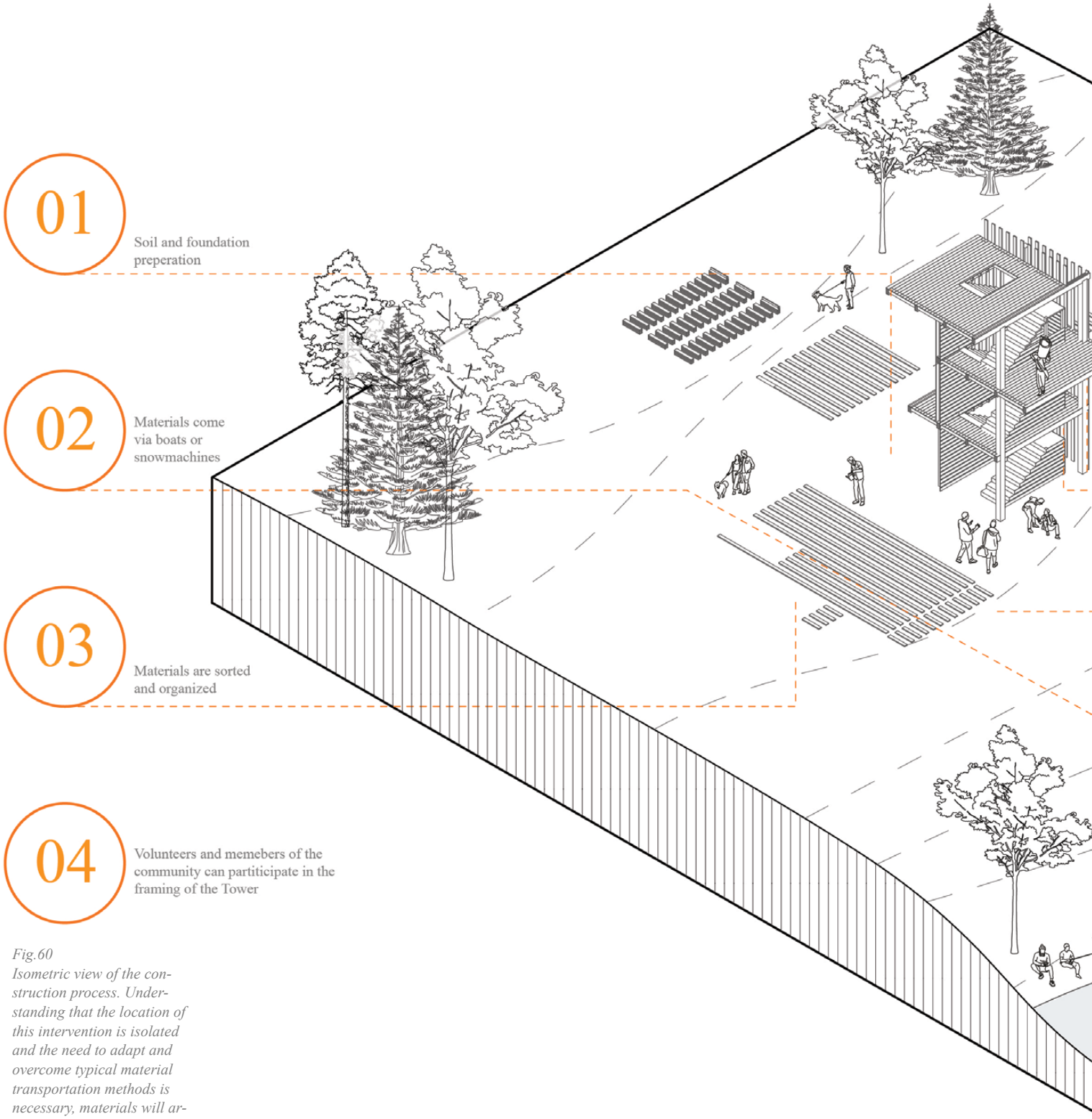
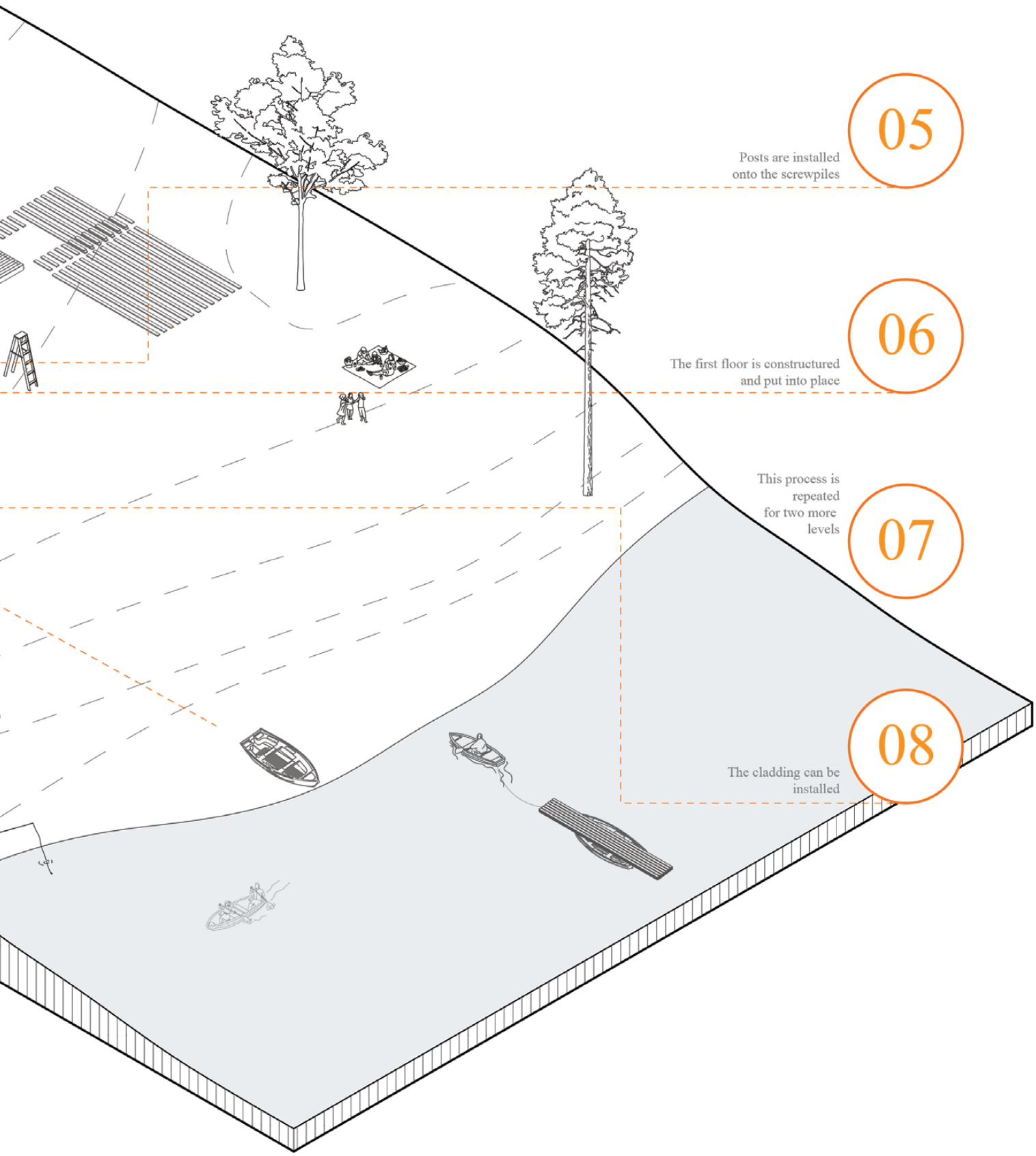
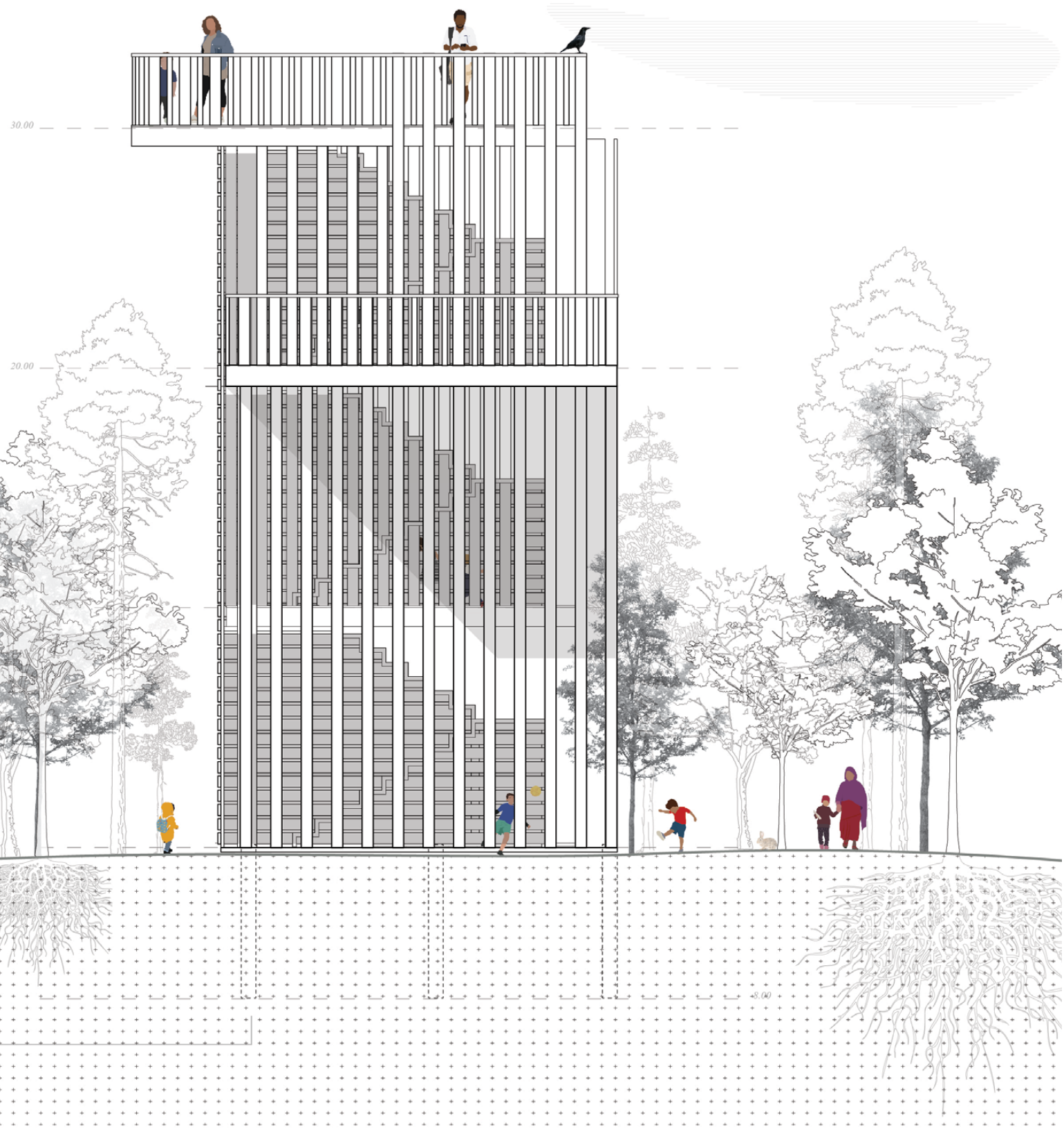


Fig.60
Isometric view of the construction process. Understanding that the location of this intervention is isolated and the need to adapt and overcome typical material transportation methods is necessary, materials will arrive via boats or snowmobiles to ensure no trail segments are destroyed during the construction process.


05
Posts are installed onto the screwpiles
06
The first floor is constructured and put into place
07
This process is repeated for two more levels
08
The cladding can be installed

The relationship between the Tower, people, and environment represents a symbiotic experience that needs to be explored to understand the complex experience that occurs when experiencing the Land through didactic architecture. The interdisciplinary pedagogy brought forward through exploring the site in a vertical manor can teach us the importance of knowing the history behind the Conservation Area. Bringing a new dynamic of how people see the Land will inevitably increase the appreciation for the immediate environment and the intent behind acts of reconciliation through making. While having a proximate connection to the Lake, nearby wetlands and trees, the Lookout Tower explores various layers of ecological understanding from a bird's eye view. By creating various platforms, the opportunity to have signage and explanations of the history of Sudbury will encourage people to learn about the signific Land uses, creating more than just an objectified experience. The staircase then becomes a learning tool, with new information coming to light as you climb up the tower.

Fig.61
Intertwined with its natural landscape, the Tower encourages people to experience the site vertically instead of horizontally.

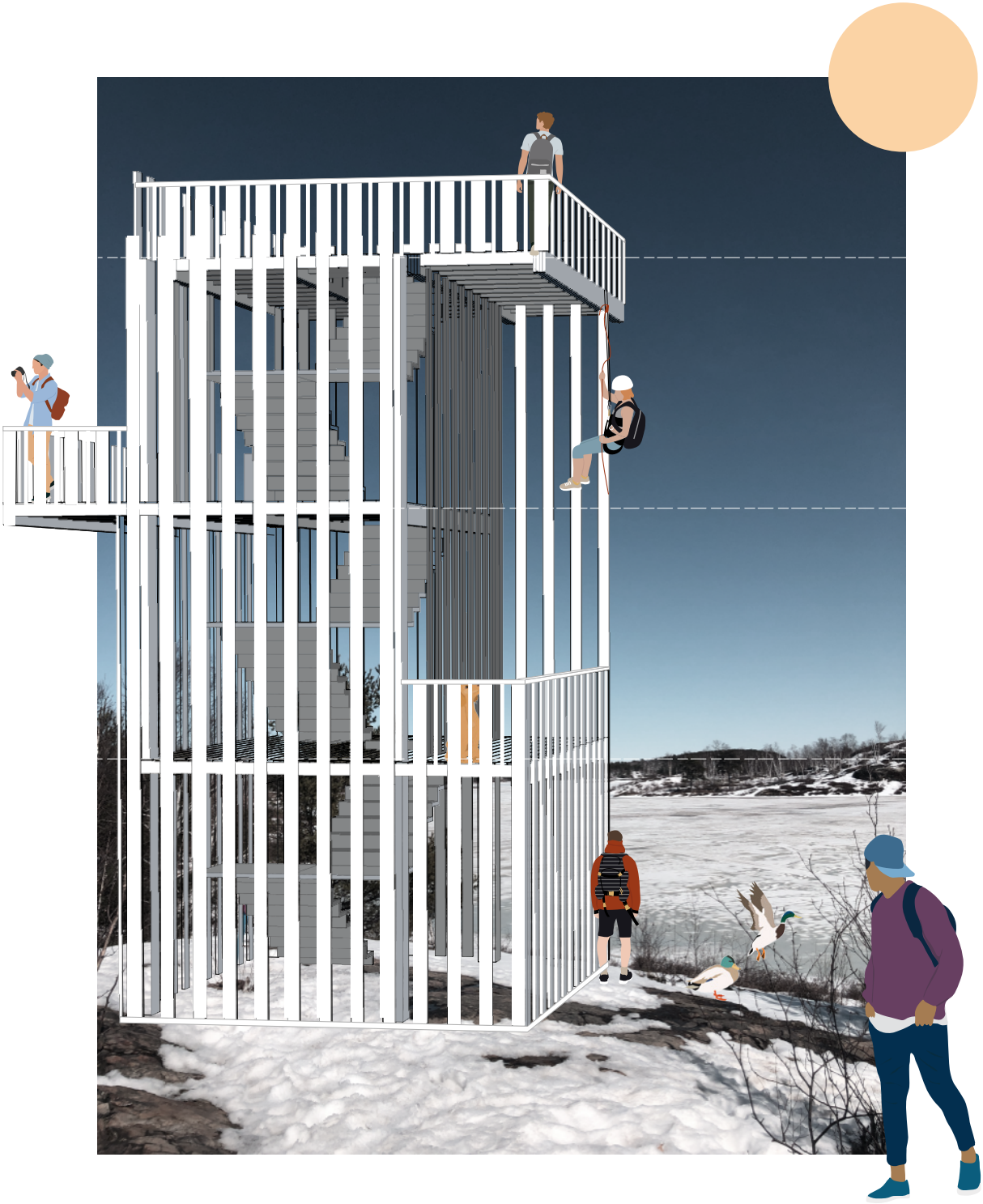

30.00
20.00

Framed around pedagogy, new experiences and exploration, the Lookout Tower will expose the innate curiosity of people using the Lake Laurentian Conservation Area. By creating a structure that enables people to see the site from different perspectives, this intervention will expand the knowledge of everyday pedestrians by framing set views and creating a series of infographic signage relating to Sudbury history, Land acknowledgement, reciprocity and Land-based learning. By enabling people to use the Tower freely, this will become a secondary exploration site beyond the natural landscape and existing flora. The adjacency to Lake Laurentian will encourage canoers and kayakers to stop, pause, and gather a sense of place while interacting with the Tower. Built by the community, the sense of pride and respect will be brought to light through the construction process and leave Sudburians, visitors and wildlife to interact with the structure in a variety of ways.

Fig.62 + 63

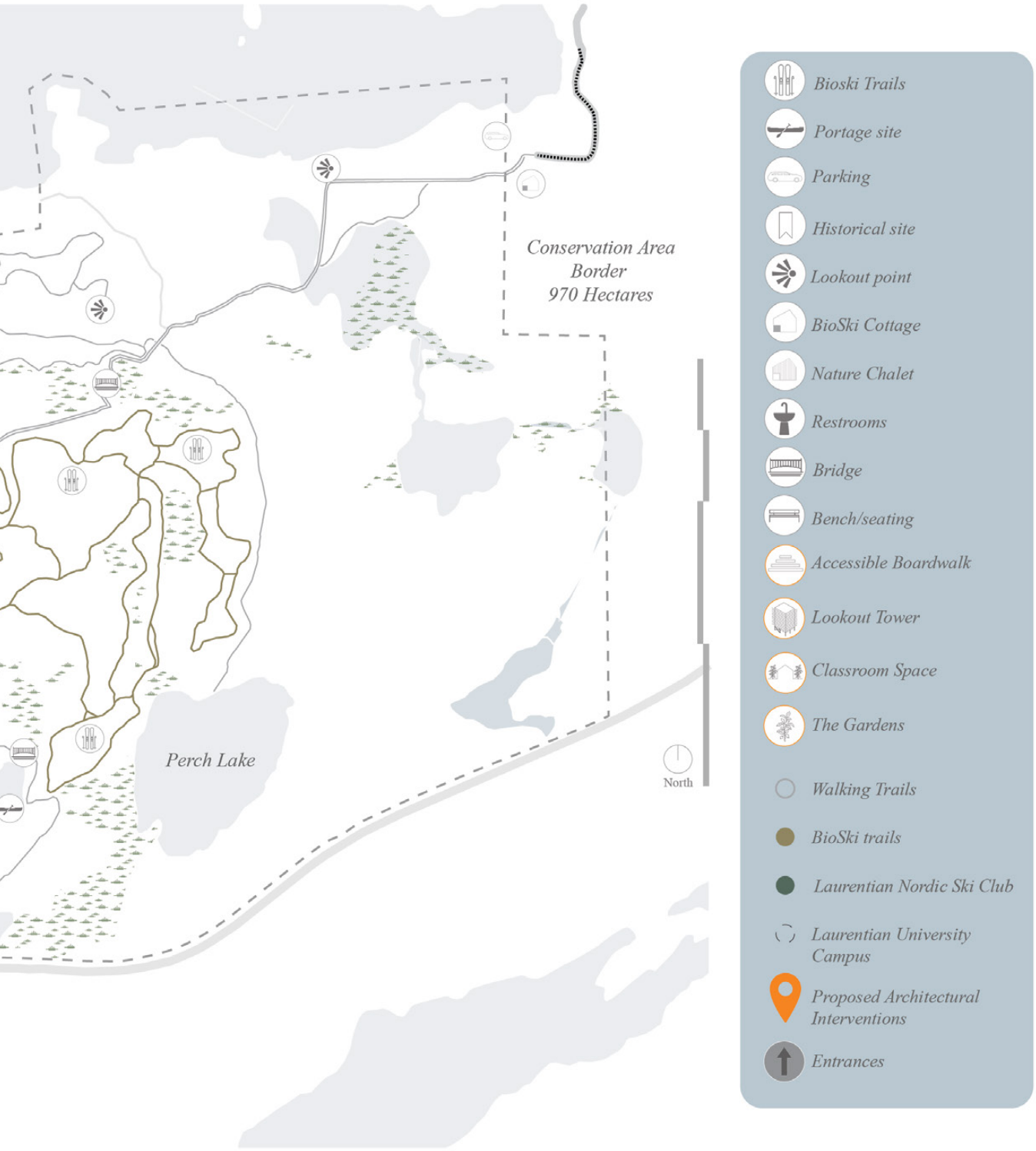
(Right)Anticipating people to sue the Tower in unexpected ways, this view shows the possibilities this intervention can support.

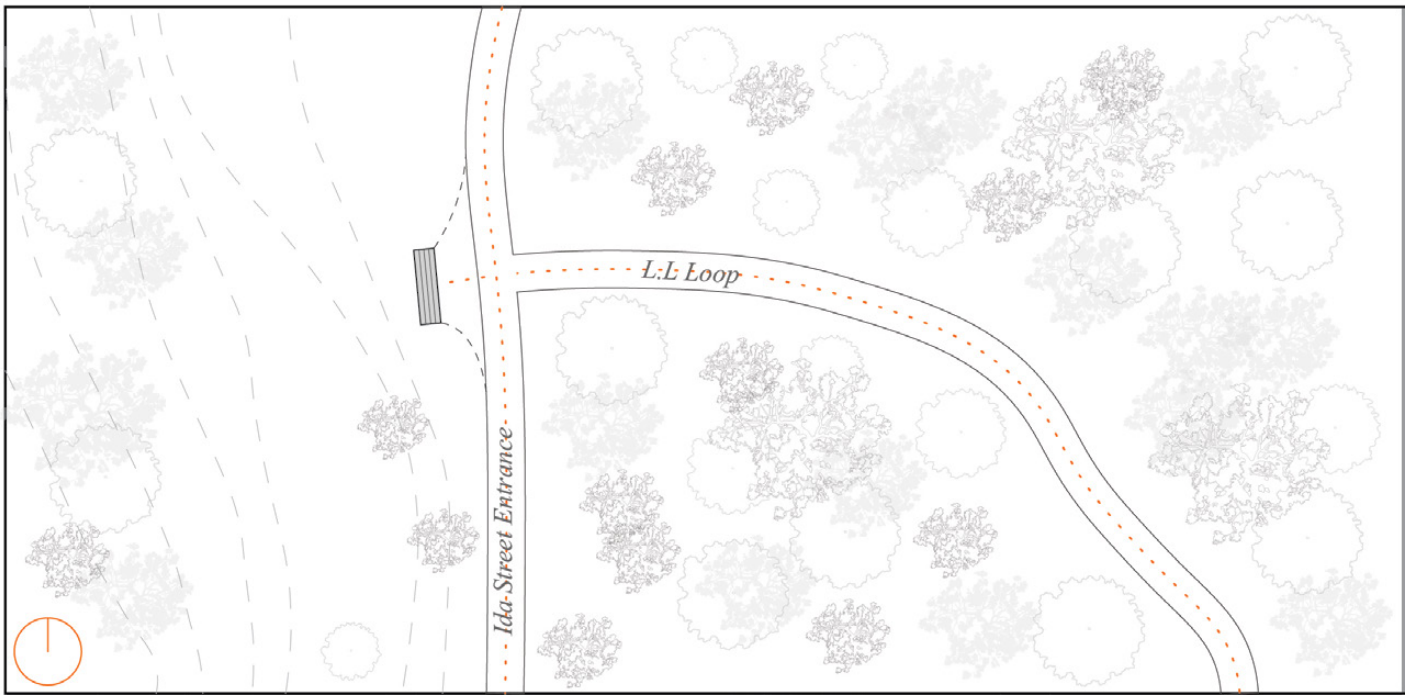
(Bottom) With this Tower, people can enjoy the site from a new perspective while broadening their appreciation.

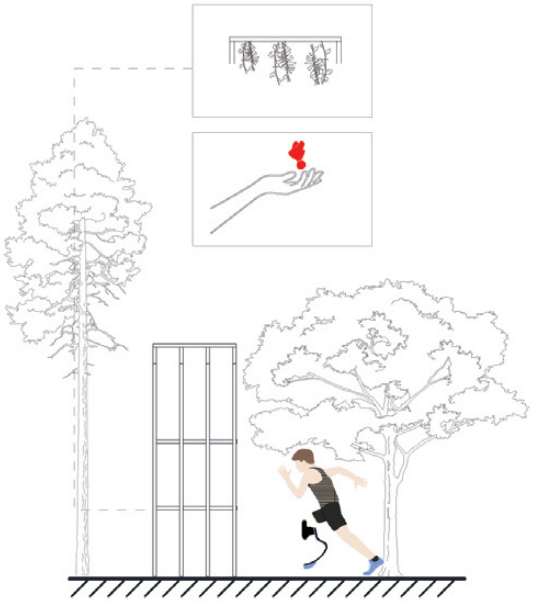


5.5. The Medicinal Garden Pavilions

Fig.64
Context map showing where each of the Medicinal Gardens will be located on the site.


Conservation Area
Border
970 Hectares
Perch Lake
North
Bioski Trails
Portage site
Parking
Historical site
Lookout point
BioSki Cottage
Nature Chalet
Restrooms
Bridge
Bench/seating
Accessible Boardwalk
Lookout Tower
Classroom Space
The Gardens
Walking Trails
BioSki trails
Laurentian Nordic Ski Club
Laurentian University Campus
Proposed Architectural Interventions
Entrances

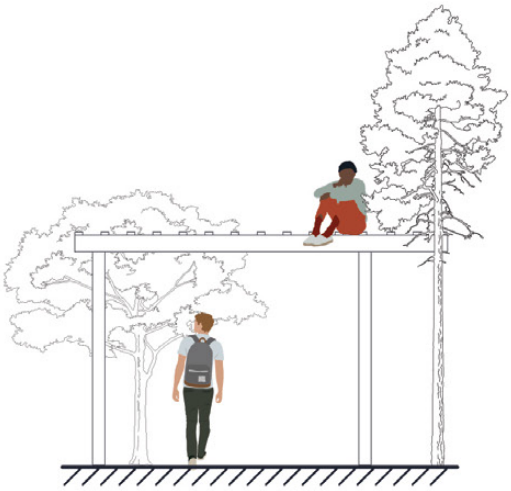




Trail Elevation - The Tobacco Pavillion

Tobacco is the first plant that the Creator gave to First Nations Peoples.Tobacco is air-cured by hanging the leaves.
"We express our gratitude for the help the spirits give us through our offering of tobacco".

Key Map



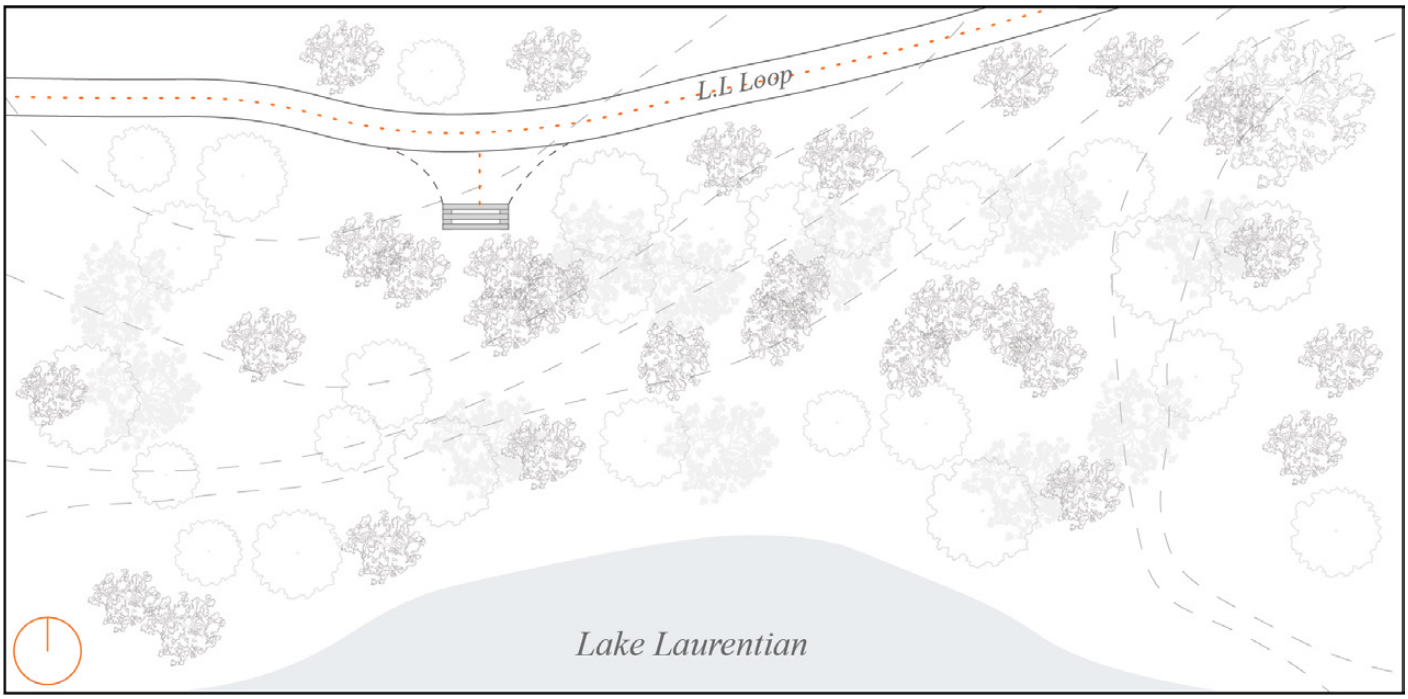
The Tobacco Pavilion

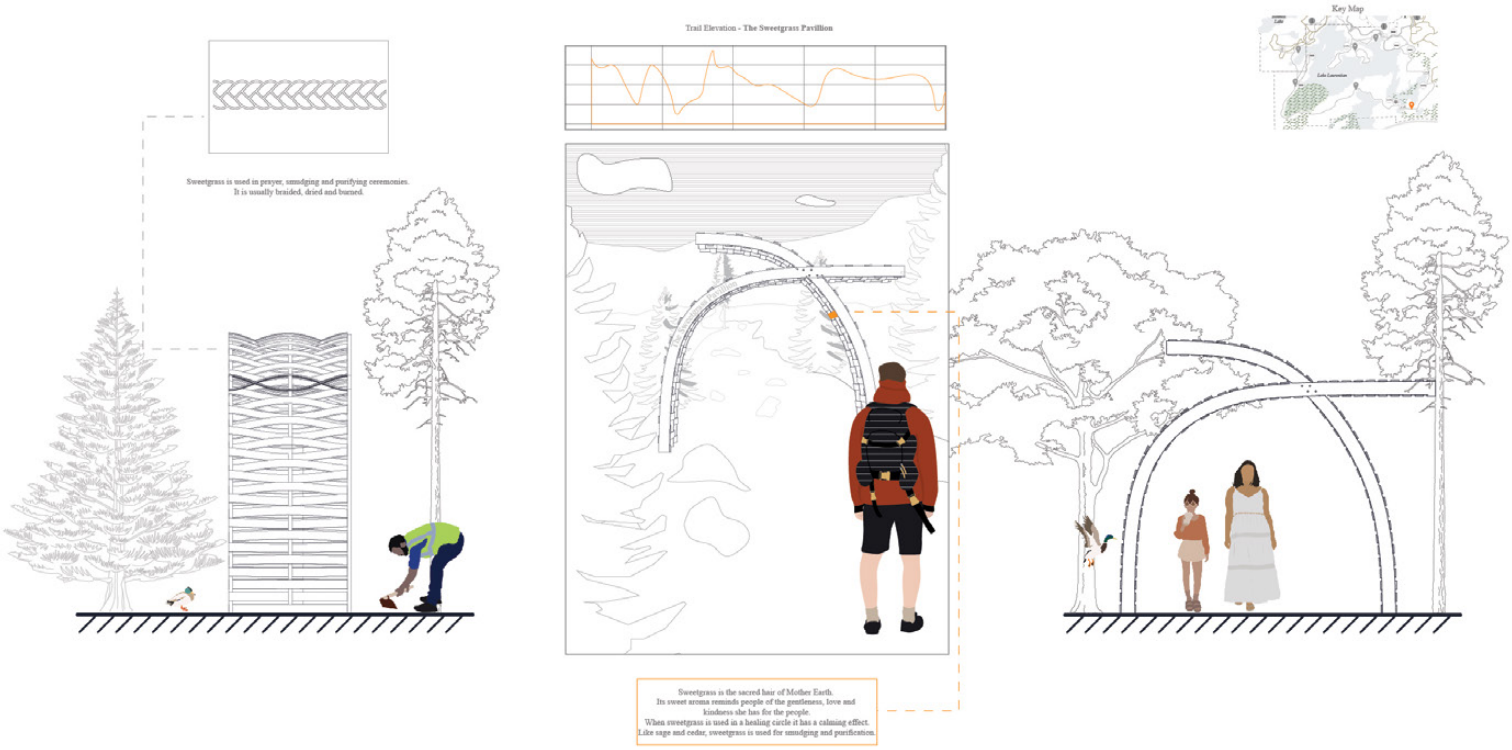
Fig.65
The tobacco pavilion will encourage people to learn about the first medicine while reconnecting to the Lake Laurentian Conservation Area.

While traditional gardens teach us about botany, the four primary medicines also have powerful stories and meanings, which can be brought to us solely through teachings. The design evolved to include garden pavilions representing each of the traditional medicines. Similar to the other interventions, these installations can be constructed by the community in a workshop environment, learning about bentwood structures, indigenous methodologies and standard building construction. First, the tobacco pavilion represents the story and teachings of tobacco. This pavilion is airy, light, and framed so that plants can hang from the top. As tobacco leaves are hung to dry, this pavilion teaches the way of curing tobacco while making visitors pause, reflect and learn about the first medicine.

Tobacco is the first plant the Creator gifted to the First Peoples; it is interpreted to be the primary actor of all plant spirits. As traditional tobacco was given to the First People to communicate to the spirit world, it is common to offer tobacco as a respectful way of asking for guidance, information, or knowledge. When one offers tobacco, they are actively communicating their thoughts and emotions. Tobacco is also offered to the Land as gratitude and reciprocity when harvesting materials.

"Give thanks for what you have been given. Give a gift, in reciprocity for what you have taken." - Robin Wall Kimmerer[62]

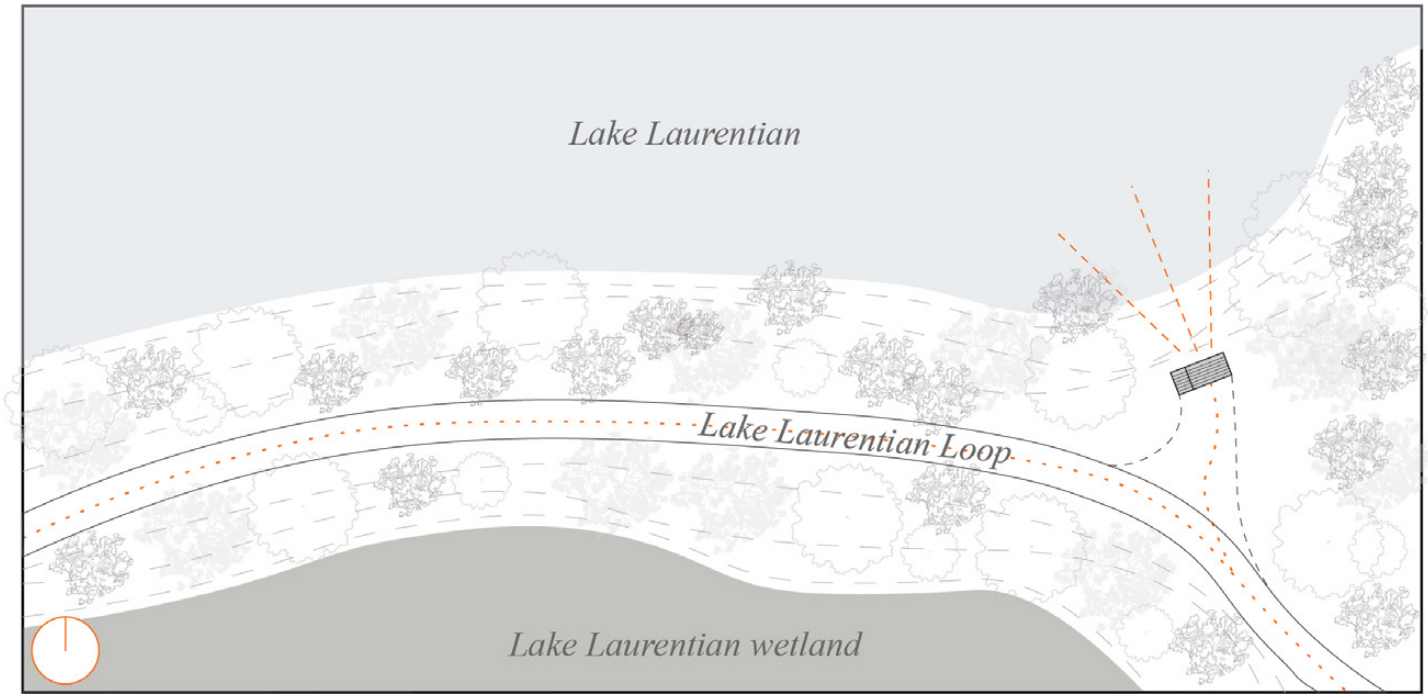

L.L Loop
Lake Laurentian


Sweetgrass is used in prayer, smudging and purifying ceremonies.
It is usually braided, dried and burned.
Trail Elevation - The Sweetgrass Pavillion
Key Map
Sweetgrass is the sacred hair of Mother Earth.
Its sweet aroma reminds people of the gentleness, love and kindness she has for the people.
When sweetgrass is used in a healing circle it has a calming effect.
Like sage and cedar, sweetgrass is used for smudging and purification.

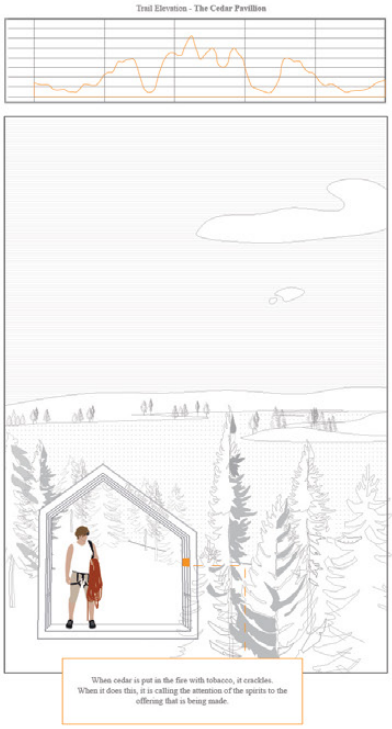
The Sage Pavilion

Fig.66
Community members will have the opportunity to plant and harvest medicinal plants in the raised planter.

Second is the sage pavilion. “Sage is used to prepare people for ceremonies and teachings. Because it is more medicinal and stronger than sweetgrass, it tends to be used more frequently in ceremonies.”[63] As sage is often bundled, the pavilion wanted to mirror this act by using 2” x 2” members that are bundled, acting as the seat, frame, and planter. A common use for sage includes burning it for cleansing homes, as well as releasing negative energy. The pavilion will act as a sacred space where one can sit, reflect and release themselves of any unfavourable thoughts that are troubling the mind. Located off the trail segment, a sense of privacy will give people the chance to reflect in peace without being disturbed by nearby hikers. Interestingly, there is a male sage and a female sage. The female sage is used by women.


Lake Laurentian
Lake Laurentian Loop
Lake Laurentian wetland


Cedar is sometimes scorched to improve its hardness.
Cedar is used to purify the home. It also has many
restorative medicinal uses.


Trail Elevation - The Cedar Pavillion
When cedar is put in the fire with tobacco, it crackles.
When it does this, it is calling the attention of the spirits to the
offering that is being made.


Key Map

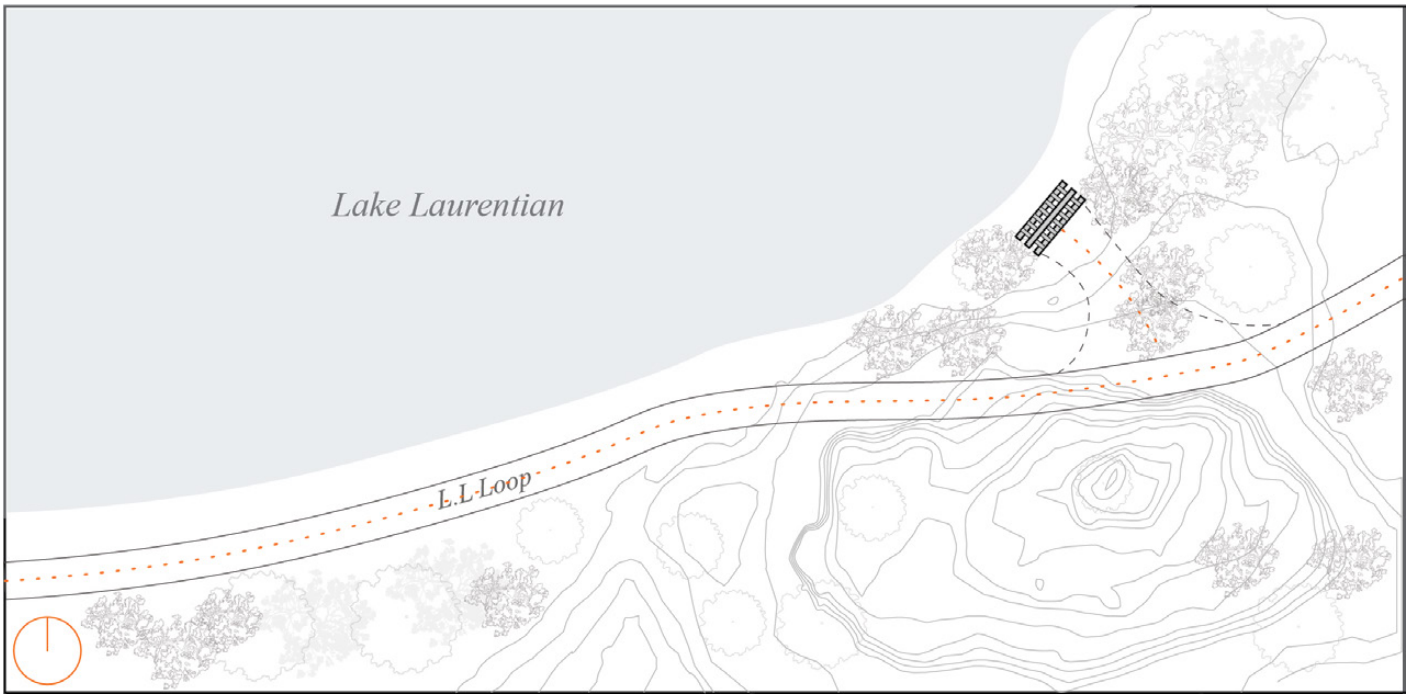
The Cedar Pavilion

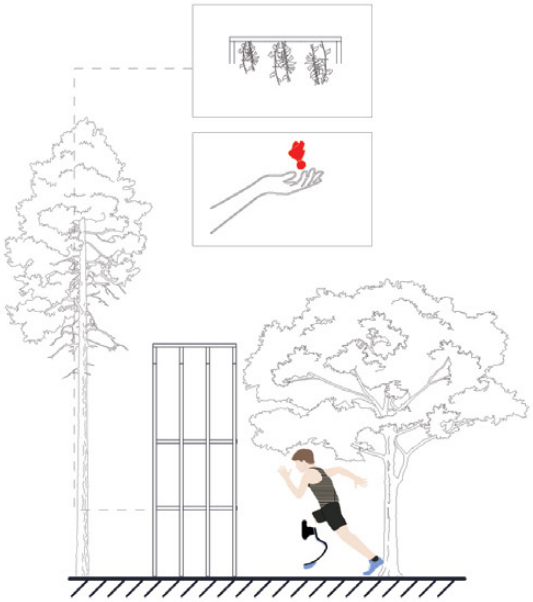
Fig.67
While teaching people about the traditional uses of cedar, the materiality of the pavilion will also weatherproof the timber through the charring process, as well as repel insects and build a higher fire resistance.

Following sage is cedar, a common resource within the conservation area. Similar to sage and sweetgrass, cedar is used for purifying homes and has many medicinal purposes. When cedar is put in the fire with tobacco, it crackles; when it does this, it is calling attention to the spirits. To represent this teaching, this pavilion will be made from locally harvested cedar from the McEwen School of Architecture forest and charred to represent the significance of the spirits and the offerings being made.

"Cedar is used in fasting and sweat lodge ceremonies as a form of protection: cedar branches cover the floor of the sweat lodge and a circle of cedar surrounds the faster's lodge."[64]

When interacting with the cedar pavilion, one can feel safe and at one with the surrounding Land. Uniting the pavilion and Lake Laurentian through site placement, it can act as a place of ceremony, reflection, or as a seating area.

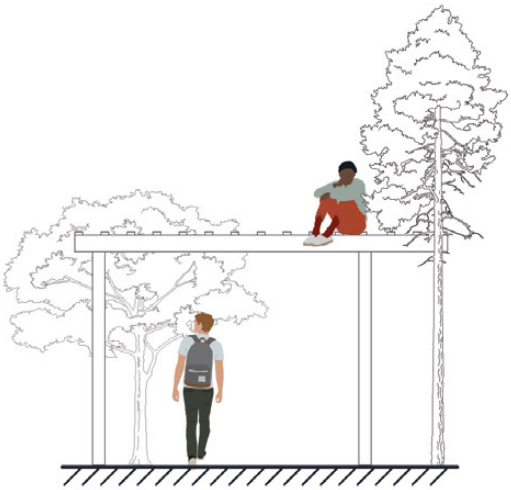




Trail Elevation - **The Tobacco Pavillion**

Tobacco is the first plant that the Creator gave to First Nations Peoples.Tobacco is air-cured by hanging the leaves.
"We express our gratitude for the help the spirits give us through our offering of tobacco".

Key Map



The Sweetgrass Pavilion

Fig.68
The tranquil location of the sweetgrass pavilion will be an area where elders, students and members of the community can have peaceful ceremonies fully immersed within the natural landscape.

Last is sweetgrass, a smudging tool and a purifier. Sweetgrass is the sacred hair of Mother Earth and is often braided. To represent the fourth medicine, this pavilion uses a weaving technique that teaches the users how to gift sweetgrass. By inviting people to pause and reflect in time, the four medicinal garden pavilions intend to help rekindle ancestral knowledge about sacred ceremonies and the four medicines.

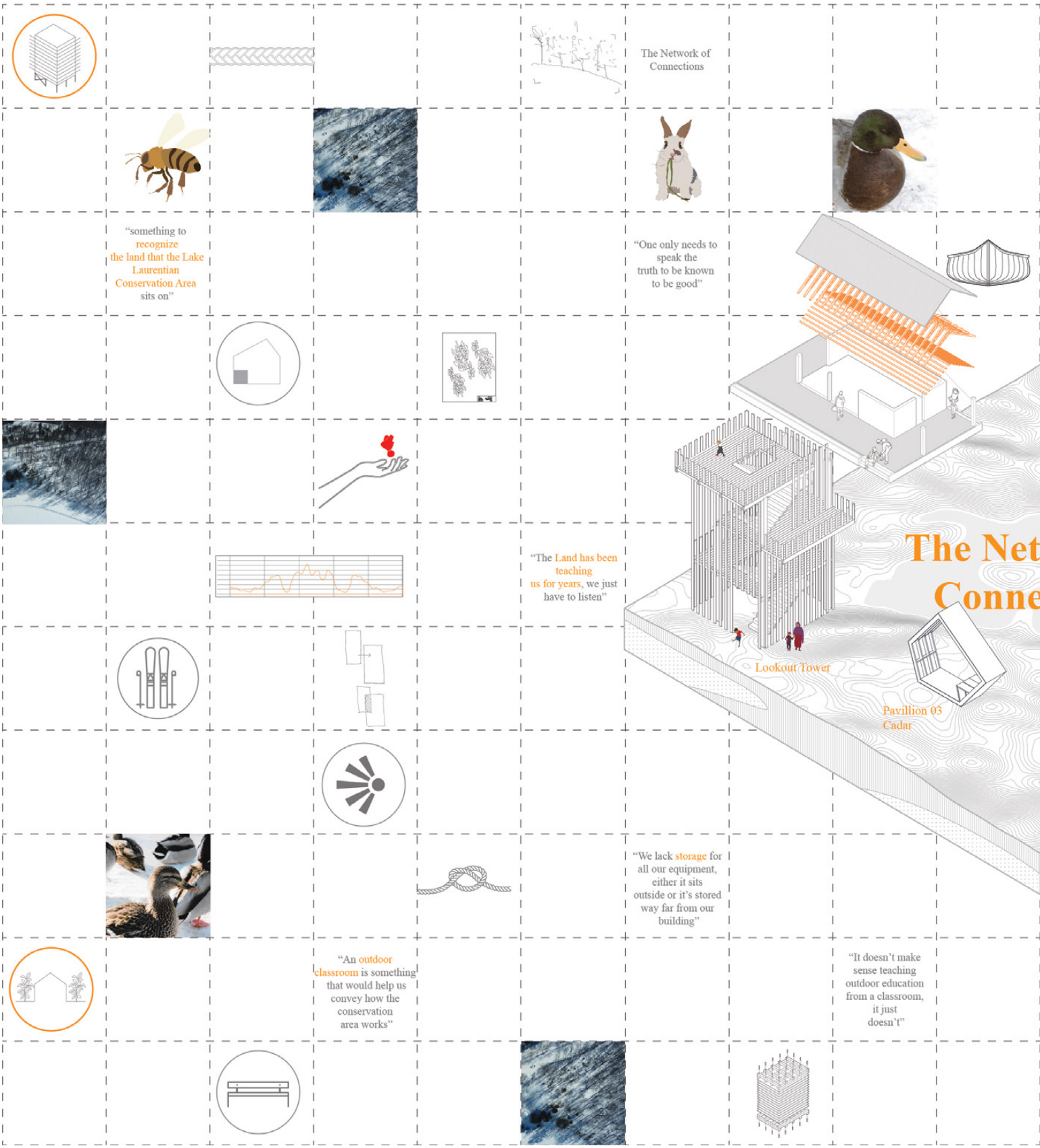
When used in ceremonies, the sweet aroma comforts people and acts as a natural calming technique.[65] Being in close proximity to the water's edge, this pavilion will act as a safe space of refuge for people to come and reconnect with the Land in a tranquil atmosphere.

For the four medicinal pavilions, the intent was to not disturb the existing landscape with invasive plants; but to utilize them as a space where ceremonies, reflections and seating can occur. Incorporating raised planters in the sage and cedar pavilions creates an area where elders, students and community members can plant and harvest medicinal herbs without damaging the Land. Hopefully, many unplanned activities and ceremonies will take place within and around these four garden structures.

Fig.69 -72
The medicinal garden pavilions in the Lake Laurentian landscape. Although placed in a specific order and orientation, these light structures have the opportunity to be relocated at any time to engage more trail users. The pavilions can be set on or off-trail segments and seasonally rotated around the Land.


THE LU GREENSPACE
AND TRAILS ARE AT RISK

Fig.73
The Network of Connections




"We want something that everyone can enjoy, maybe something that doesn't limit us to the chickadee loop"
Pavillion 02
Sage
work of
ections
Semi Covered
Accessible
Boardwalk
Pavillion 01
Tobacco
"Being one with the Land is about the immediate and textile environment, not about classroom spaces."
"A medicinal garden would be great to learn about the traditional plants that are in the area, not only seasonally but something we could harvest and teach about year-long"
The Grandfather Teachings
"Original Indigenous methods of educating children extend beyond the walls of indoor space, learning is viewed as sacred and holistic, as well as experiential, purposeful, relational, and a life-long responsibility"

5.6. Thesis Summary

This thesis has been grounded in a community setting, having conversations with people who better understand the Land than myself. Having the opportunity to learn from local Elders, conservationists and professors, the journey of designing architectural responses to health and well-being was only possible by involving community members who were interested in participating in a reciprocal exchange. This exchange lead to the design of a network of connections that can be a platform for experiential education and Land-based learning. This thesis can be used as a framework for activities to happen, both planned and unplanned, over time and as part of land-based learning. While this is not an exact solution to health and well-being, the understanding of Traditional Knowledge, Land-based learning and experiential education hopes to bring more people to the site, creating a plethora of new experiences and self-challenges. By going to the site and understanding the landscape and the community, the imposing architect should always do diligence to communicate with the surrounding environment to learn from the Land and build within it.

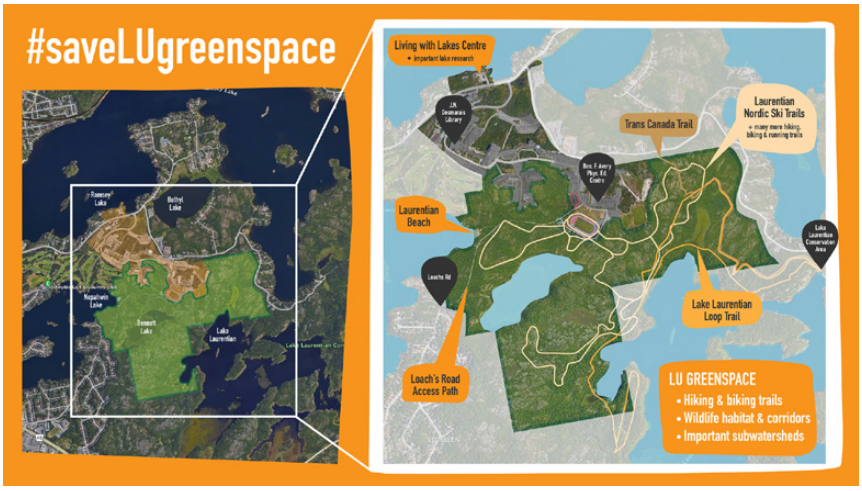
This thesis challenged the idea of Western medicine and educational pedagogy by asking how does Indigenous Land-based education and experiential learning influence architecture to enable human beings to reconnect with the intuitive connection to the Land? Although the answer was provoked, the solution does not solely rest in the architectural interventions but rather in the connections made with the community and the Land. In hopes of creating a platform for further Land-based learning to occur, this thesis reflects a broader effort, involving many more visions than my own. This network is not site-specific and can

Fig.74
SaveLUgreenspace poster designed by Coalition for a Liveable Sudbury.

#SaveLUgreenspace
https://liveablesudbury.org/lu_trails/

be implemented into many architectural interventions by following the abstract guidelines listed throughout the thesis. Land-based learning, experiential education and health and well-being all fall into connecting with the Land once the subject is analyzed and decolonized.

By recognizing the potential the Land has to offer to heal us, the need to reconcile and indigenize our Western pedagogy through architecture can be a step toward creating a stronger sense of place and well-being. In a project working so closely with the community of Sudbury, my goal was to create drawings and diagrams that anyone could read and translate into a physical building/installation. By empowering and encouraging the community of Sudbury to activate the Conservation Area to its full potential, this project will hopefully have a life beyond this thesis to demonstrate why the Lake Laurentian Conservation Area and the Laurentian Greenspace should be saved and respected for generations to come.



End Notes

58 Daniela Stuewer and Konrad Wiltmann, Conservation Sudbury: How the Land is being used and what is needed, *Zoom Web Call*, January 13, 2022.

59 Roberta L Woodgate, "'It Is about Being Outside': *Canadian Youth's Perspectives of Good Health and the Environment, Health and Place*" 31 (2014).

60 Professor at the Laurentian University Faculty of Outdoor Education, *Zoom Web Call*, Nov.15, 2021.

61 Stuewer and Wiltmann.

62 Robin Wall Kimmerer, *Braiding Sweetgrass* (Minneapolis, Minnesot: Milkweed Editions, 2013).

63 "The Four Sacred Medicines," Government of Ontario, Aboriginal Healing and Wellness Strategy, accessed April 28, 2022, https://aht.ca/wp-content/uploads/2017/12/FourSacredMedicines.pdf. p.1.

64 Ibid. p.1.

65 Ibid. p.2.

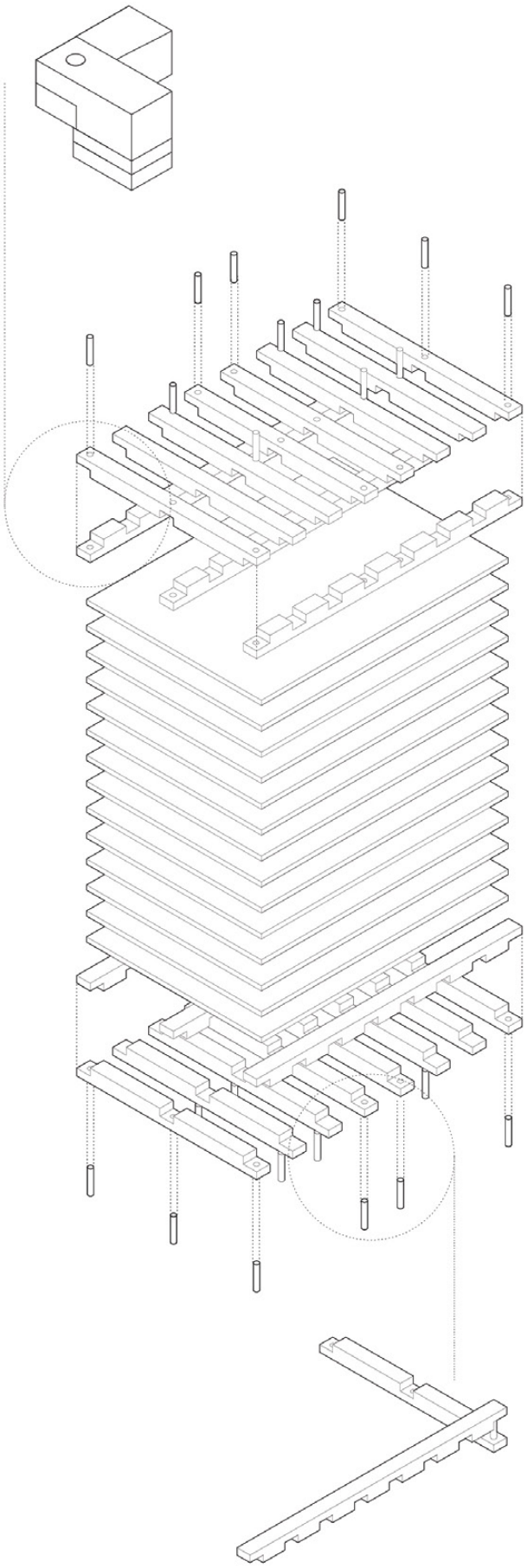
Appendix A - Thesis Artifact

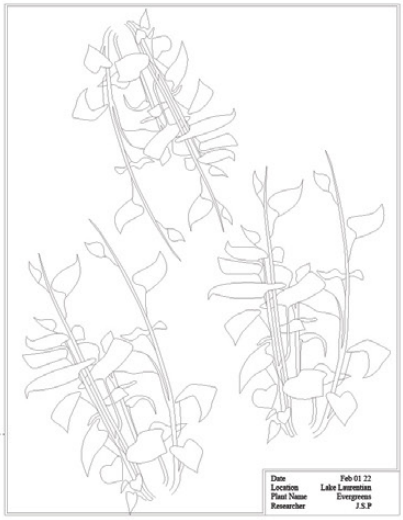
The Plant Press

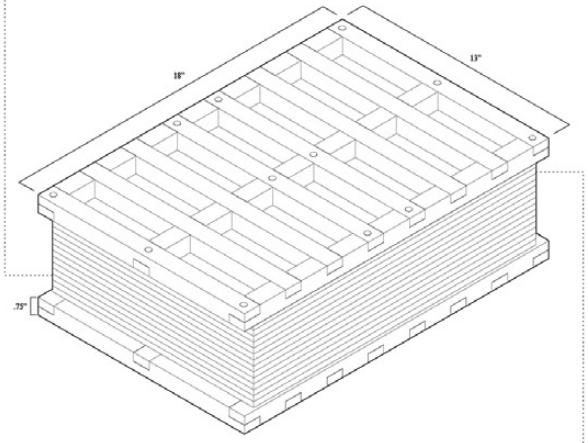
Botanical collections are essential to our understanding of the Lake Laurentian Conservation Area's flora and plant communities, as well as its history. The plant press is a teaching tool that can be used by anyone who wants to learn about Land history, and the traditional medicinal botany that can be found within the Lake Laurentian Conservation Area. This object represents the three main groups that I've been working with throughout the thesis project, Conservation Sudbury, Outdoor Education programs, and Indigenous teachings. Part diary and part archive, the plant press can be used as a teaching tool to not only learn about plants visually and orally, but physically, by keeping a repertoire of physical species within the press.

With the design of this object, I hope to bring to light the possibilities of learning through nature, and the reciprocal involvement needed to rekindle ancestral knowledge by being one with the Land. In hopes of creating multiple plant presses for various species, the design reflects the types of plants, sizes and materiality necessary to convey the educational purposes of a herbarium.

Fig.75
The plant press, process diagrams identifying construction methods.




Date Feb/01 22
Location Lake Lamontian
Plant Name Evergreens
Researcher J.S.P


18"
13"
.75"


Date Feb/01 22
Location Lake Lamontian
Plant Name Juniper Berries
Researcher J.S.P

Fig.76
Process of using the plant press

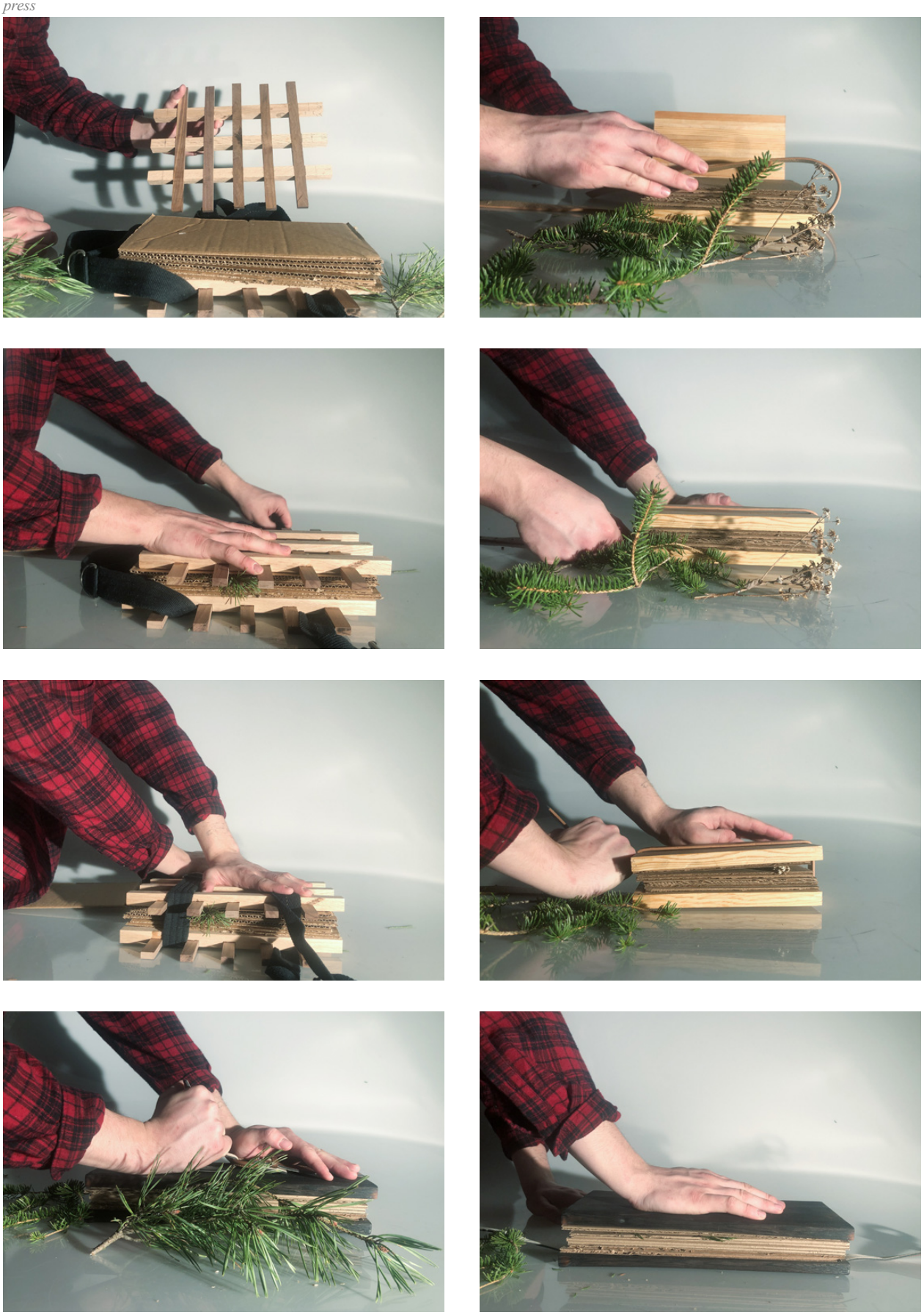
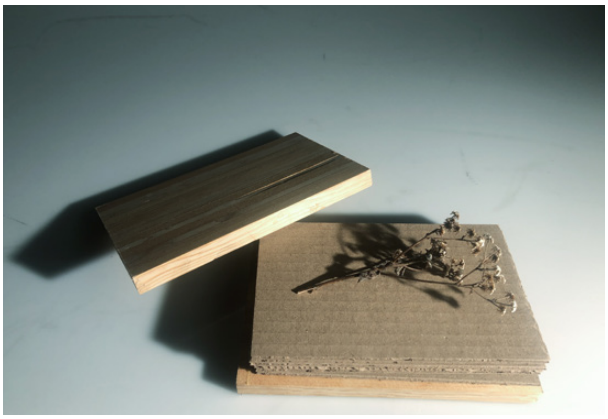


Fig.76



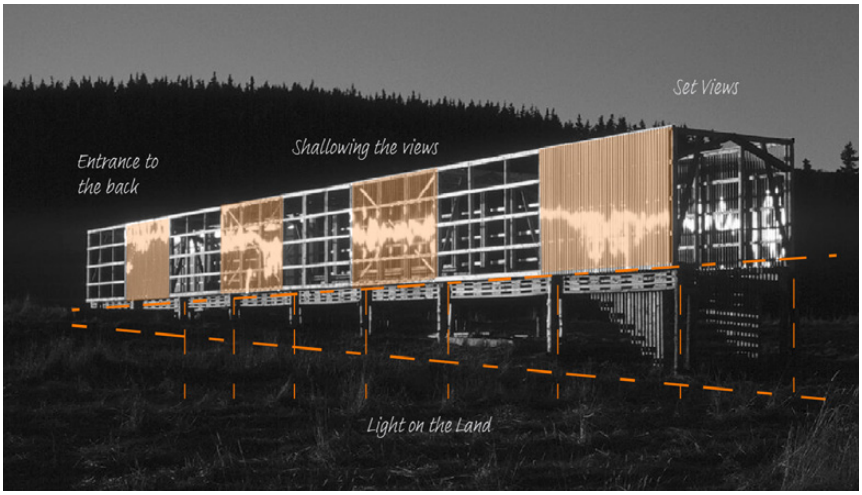
Appendix B - Case Studies

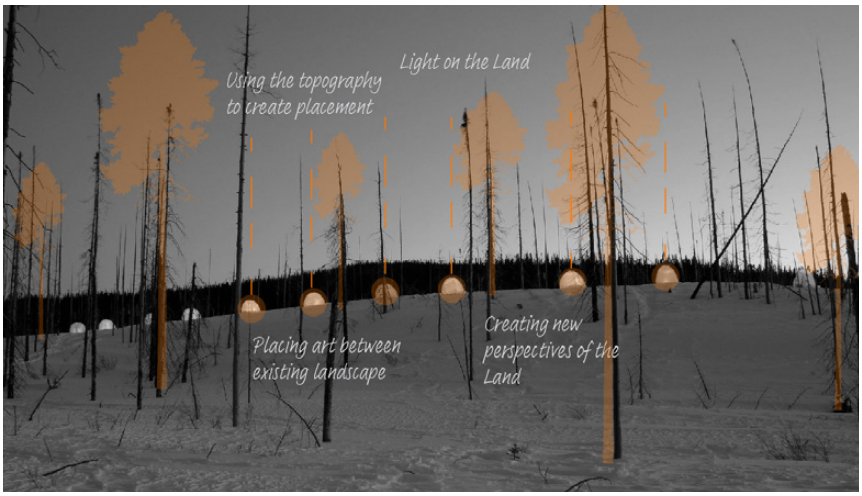
Understanding the relationship between the Land and the architecture is key to the project. Analyzing the work of architects like Pierre Thibault, Brian MacKay-Lyons, Talbot Sweetapple, Alfred Waugh and others started to bring to light the importance of respecting the Land while giving it an additional purpose. The Ghost series, by MacKay-Lyons Sweetapple Architects, are thirteen structures grounded in Maritime stories, reincarnated into the present day. The theory of bringing novelty tales or ghost stories into architectural representations was something that was inevitably realized through Land exploration. Bringing words into context has been a similar process for this thesis, undertaking Grandfather teachings, and placing them into architectural follies to understand and rekindle stories and knowledge. The Ghost series are also deeply rooted in a design-build mindset. The projects started with the involvement of architecture students, similar to the community involvement proposed within the thesis project.

Atelier Pierre Thibault is another example where the Land is an inspiration for the projects. Often placing his follies within a natural landscape, the studio is selective of the site, environment, and fauna surrounding the installations. Les jardins d'hivers sets out to be light on the Land, while using the existing topography to create placement. The act of placing the light tents between trees made for a relationship between the naturally illuminated sky and the artificial lighting coming from the installations. While disturbing the Land as minimally as possible, this in fact, gave the terrain a new life, bringing people to the site for a new adventure. The pavilions give inspiration to the traditional gardens, in a way that made them out of sight from each other, to bring that same ambiguous feeling of "new adventure" to people using the Conservation Area.

Les Chambres blanches by Atelier Pierre Thibault gave quiet refuge to people experiencing the Land, all the while respecting the existing natural landscape. The light lookout points gave users a new way of experiencing the Land, with slight elevation changes. Creating set views and lookout orientations, the projects set out to force people to look at a specific moment in time. Although painted white, the materiality of the folly is all-natural, using wood as the structural elements and as the cladding. Translating this into the thesis, the lookout tower was subtly influenced by the set of ephemeral moments created by the orientation of the structure. At a larger scale, the Lookout Tower aims to offer people to experience the Land in a new way, while pinpointing three main views: the Superstack, endless greenery, and Lake Laurentian.

Alfred Waugh and Formline Architecture influenced almost every aspect of the thesis in multiple ways. The team takes pride in understanding the local culture and abutting landscapes to create sensible architecture. As a settler living in traditional Lands, it was important to understand how First Nation architects understand and design with the Land. A few key projects were analysed and understood. The Liard River Hot Springs was a significant influence on the perspective of environmental sensitivity. The project was carefully designed to reflect the local ecological systems, more specifically, the snail population. The structure was designed to be minimally invasive on the local Hotwater Physa, an endangered snail that is located nowhere else in the world. Taking lessons from these precedents, the thesis aims to be light, intergrated and working with the Land to create a reciprocal relationship between Land and architecture.





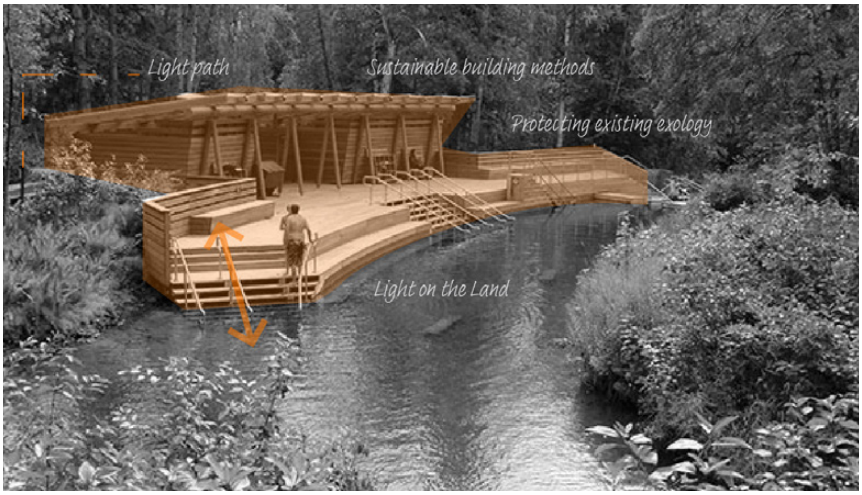


Fig.77
(Top) Ghost 3 by MacKay-Lyons Sweetapple

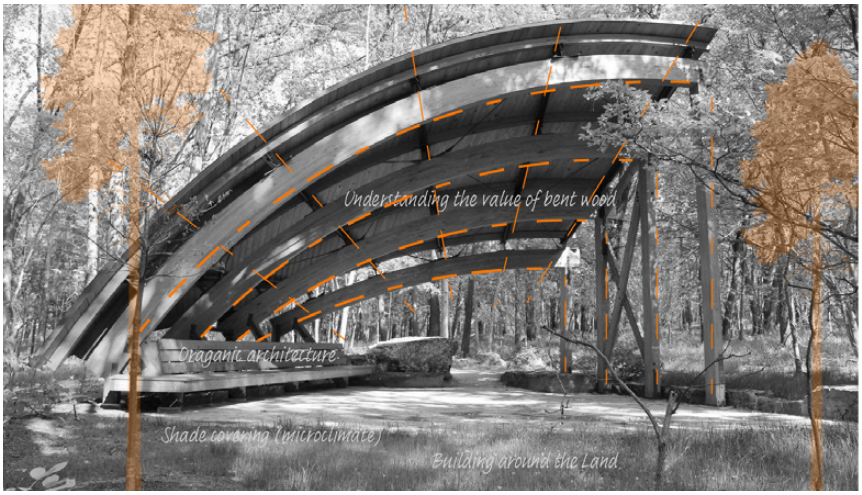
(Middle) Les gardins d'hivers by Atelier Pierre Thibault

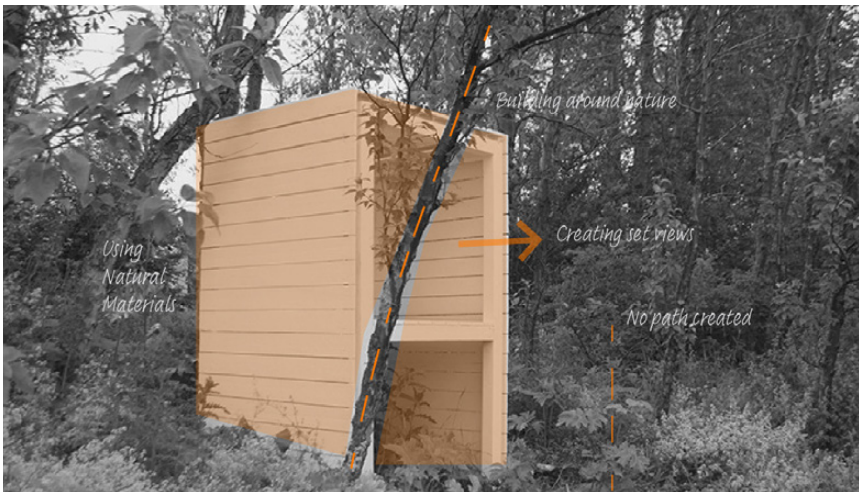
(Bottom) Liard River Hot Springs by Formline Architecture

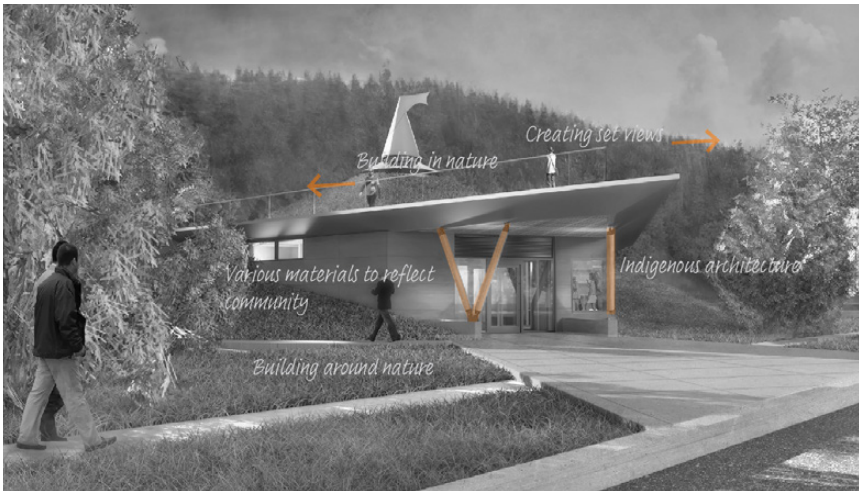
Fig.78
(Top) The Tulip Tree Shelter by Crystal Bridges Museum

(Middle) Les Chambres blanches by Atelier Pierre Thibault

(Bottom) Barkerville Indegenous Cultural Cenre by Formline Architecture







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